

#### DEPARTMENT OF BUSINESS AND MANAGEMENT

Master Thesis in Advanced Corporate Finance

# A secondary market for NPLs: The Italian government's response and potential consequences for the listed banks

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#### Introduction

Nowadays non-performing loans (NPLs) are among the hottest financial topics and definitely one of the top priorities of European politicians and supervisory authorities. The global financial crisis and the subsequent recession have caused a sharp deterioration in banks' credit quality, which is then translated into a restriction in the supply of credit and/or a worsening of lending conditions, subsequently affecting the growth prospects of viable firms. However, while in some countries, like the United Kingdom, Ireland and Spain, the problem has been promptly managed with the creation of systemic bad banks, in Italy the stock of NPLs has more than quadrupled since 2008, to reach the historical peak of  $\notin$  341 billion (of which  $\notin$  200 billion of bad loans) in December 2015. At the same time, sales transactions of NPLs have been of limited amount due to the lack of a secondary market, whose development has been hampered by many factors, such as the length and inefficiency of foreclosure and insolvency procedures, the information asymmetry between originating banks and investors and the still uncertain prospects of economic recovery. Only recently, the Italian government has adopted various structural measures to overcome what is the real underlying problem: the price gap between seller banks and buyer investors, a disagreement amounting today to around 20%. However, given the continuing speculation on Italian banks, it would seem that investors believe that a definitive solution to the problem of NPLs has not yet been found.

In short, the purpose of this work is to analyze and discuss the problem of NPLs in Italy, the Italian Government's response and the possible impacts on profit and capital adequacy that the sale of NPLs would have on the major Italian listed banks.

The thesis is organized in four chapters. **Chapter 1** initially describes Non-Performing Loans and the recent classification provided by the European Banking Authority (EBA). A special section is then dedicated to the literature review on NPLs determinants, namely those macroeconomic and bank-specific factors explaining the behavior of NPLs. Once described the causes of asset quality deterioration, it is presented a deeper analysis on the NPLs implications on banks' performance (i.e. profitability, capital adequacy, asset quality, liquidity, and efficiency) and the feedback effects between the real and financial sectors. The final part of the chapter describes the management of NPLs and, especially, the potential strategies (and their pros and cons) that banks can adopt to address the problem of NPLs, according to a different degree of outsourcing.

**Chapter 2** offers an overview of NPLs valuation. More specifically, it describes in detail the provisions of IAS 39 (which all Italian banks should follow, like the main European banks that adopt the IAS-IFRS accounting principles) on loans recognition and measurement, the divergences with the Basel framework and the attempt to align regulatory and accounting requirements with the new IFRS 9. Then is presented an alternative valuation method to the amortized cost, namely the fair value approach, which most closely matches the perspective of investors.

**Chapter 3** describes the current situation with NPLs in Italy. Following the overview of Italian banking system and the comparison with the other three large euro zone economies (Germany, France and Spain), this chapter introduces the current problem of a poorly developed secondary market for NPLs and the main impediments, both on the supply and on the demand side, which have left Italy behind other EU countries. At the same time, it has been described the potential benefits of having an active and liquid market for distressed loans. The final part of the chapter looks into the true problem (and its determinants) with the inefficiency of the NPLs market in Italy, namely the wide gap between the price at which banks would be willing to sell their NPLs and the price at which investors are willing to buy. Hence, two critical issues in reducing the gap are discussed: aligning the book value of non-performing loans to the current market prices and the impossibility of an Italian systemic bad bank.

Finally, in **Chapter 4** it is presented the Italian Government strategy for fostering a market for NPLs and the potential impacts of NPLs disposals on a sample of Italian listed banks. More specifically, the first part of the chapter discusses the three main strands of the strategy (and their pros and cons): (i) a package of structural measures on both legal and fiscal aspects, (ii) the GACS, a State guarantee scheme to facilitate the NPL securitization and (iii) "Atlante", a private fund whose purpose is to act as a buyer of last resort for those banks that face market difficulties. The second part is instead an attempt to evaluate the possible implications of the measures so far adopted, and more generally, the potential impacts of NPLs disposals on banks' net profit and capital. In doing so, it has been first selected a sample of eleven Italian listed banks; then two kind of simulations have been conducted: a NPL coverage uplift and a potential NPLs deconsolidation, at different selling prices and percentages of gross NPLs to be sold. Hence, aggregated and individual results are discussed, highlighting those banks that are in the most trouble and that would need to raise capital in the short term.

# CHAPTER 1

## **OVERVIEW OF NON-PERFORMING LOANS**

#### 1.1 DEFINITION AND CLASSIFICATION

The global financial crisis and the subsequent recession have revealed the recognized fragmentation of the banking systems, as well as the lack of a common scheme to classify loans, the main and most sizable asset category on banks' balance sheets. Accordingly, it follows that no standard definition for doubtful or non-performing loans ("NPLs") still exists.

In general, NPLs are loans or advances whose credit quality has deteriorated, to various possible degrees, such that the full repayment of principal and/or interest, in accordance with the contractual terms, is not presently sure. In this case, a deduction amount (i.e. the "LLP", loan loss provision) is recognized in the bank's income statement to account for the loan's expected losses due to default events. However, apart from this general definition, classification rules and accounting standards for NPLs, in particular the provisioning approach, vary from country to country, preventing the necessary asset quality comparisons between financial institutions.

Building on the need to harmonize NPLs reporting and assessment at an EU level, also in view of the Asset Quality Review (AQR)<sup>1</sup> exercise, the European Banking Authority (EBA) published in July 2014 the final version of the document "EBA FINAL draft Implementing Technical Standards on Supervisory reporting on forbearance and non-performing exposures under article 99(4) of Regulation (EU) No 575/2013", enclosing the harmonized definition of forbearance (FBE) and non-performing exposures (NPEs). In

<sup>&</sup>lt;sup>1</sup> The AQR is a risk-based assessment and focuses on those elements of individual banks' balance sheets that are believed to be most risky or non-transparent. It is part of the Comprehensive Assessment conducted by the ECB, in close cooperation with the National Competent Authorities (NCAs), on the 128 most relevant European Banks, as a preparatory phase before the ECB assuming its new supervisory role in November 2014. The AQR, divided into a preparatory and three phases from December 2013 until October 2014, pursued as its primary objectives: (a) the assessment of adequate provisioning for credit exposures, (b) determination of the appropriate valuation of collateral for credit exposures and (c) the assessment of the valuation of complex instruments and high-risk assets on banks' balance sheets. (Oliver Wyman, 2014)

particular, the proposed definitions of performing and non-performing exposure stem from the current concepts of impairment<sup>2</sup> and default, according to the International Financial Reporting Standards (IFRS) and the Capital Requirements Regulation (CDR IV/CRR), and they apply to all debt instruments (loans, advances and debt securities) and off-balance sheet exposures<sup>3</sup>, except those held for trading. Attention is also drawn to the relevance of the already adopted IMF criterion of "90 days past due"<sup>4</sup>.

Similarly, as regards the definition of forbearance, it builds on existing accounting rules and transactions which are recognized as forbearance (i.e. transactions where a concession to modify terms and conditions of the contract or its refinancing is granted to the counterparty in financial difficulties).



Figure 1.1: Umbrella approach for the definitions of forbearance and non-performing

Source: EBA FINAL draft Implementing Technical Standards (EBA/ITS/2013/03/rev1 24/07/2014)

As a result of a harmonization process based on existing practices, the EBA ultimately proposed an "umbrella approach", as illustrated above, where the new draft definitions only supplement the existing concepts without modifying them and offer a more

<sup>&</sup>lt;sup>2</sup> IAS 39.59 - A financial asset [...] is impaired and impairment losses are incurred if, and only if, there is objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset (a 'loss event') and that loss event (or events) has an impact on the estimated future cash flows of the financial asset [...] that can be reliably estimated.

<sup>&</sup>lt;sup>3</sup> They include loan commitments, financial guarantees and other commitments given.

<sup>&</sup>lt;sup>4</sup> The International Monetary Fund (IMF) proposed, in the document "The Treatment of Nonperforming Loans. Clarification and Elaboration of Issues Raised by the December 2004 Meeting of the Advisory Expert Group of the Intersecretariat Working Group on National Accounts" (2005), the following definition of non-performing loan: "A loan is nonperforming when payments of interest and/or principal are past due by 90 days or more, or interest payments equal to 90 days or more have been capitalized, refinanced, or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons—such as a debtor filing for bankruptcy—to doubt that payments will be made in full".

comprehensive coverage of transactions and purposes (i.e. accounting, regulatory, disclosure and supervisory purposes).

The EBA definition of NPEs (par. 145 ITS) refers to Article 178(1) of Regulation (EU) No 575/2013 (CRR), concerning a debtor's default. More specifically, "non-performing exposures" are those that satisfy either or both of the following criteria:

- a) <u>objective criterion</u>: material exposures which are more than 90 days past-due. The competent authorities may replace the threshold of 90 days by 180 days for exposures secured by residential or small and medium-sized enterprise (SME) commercial real estate in the retail exposure class, as well as exposures to public sector entities (PSEs);
- b) <u>subjective criterion</u>: the debtor is assessed as unlikely to pay its credit obligations in full without realization of collateral, regardless of the existence of any past-due amount or of the number of days past due.

Paragraphs 152 and 153 also specify that the "generic non-performing entry criteria" applies to (i) commitments for their nominal amount if, when used, they would lead to exposures that present the risk of not being paid back without realization of collateral and to (ii) financial guarantees given for their nominal amount, when they are at risk of being called by the counterparty, in particular when the underlying exposure meets the "generic criteria".

Furthermore, besides the harmonized entry criteria, the EBA has introduced objective exit criteria for all NPEs to be brought back as performing and the so-called "pulling effect", which sets specific thresholds above which all exposures to a single counterparty should be classified as NPEs. Concerning the former, exposures shall cease to be considered as non-performing when all of the following conditions are met (par. 156):

- a) the exposure meets the exit criteria applied by the reporting institution for the discontinuation of the impairment and default classification;
- b) the situation of the debtor has improved to the extent that full repayment, according to the original or when applicable the modified conditions, is likely to be made;
- c) the debtor does not have any amount past-due by more than 90 days.

Whereas the second states that, in cases where delays in payment, lasted for more than 90 days, affect more than 20% of a debtor's on-balance sheet exposures, the entire position (all on and off-balance sheet exposures) should be classified as non-performing. However,

in the event of the debtor's belonging to a group, it is necessary to assess also the exposures to other entities of the group.

For what regards, instead, the concept of forborne exposures, section 18 defines them as debt contracts in respect of which forbearance measures (concessions to the debtor in financial difficulties) have been extended, irrespective of whether any amount is past-due or of the classification of the exposures as impaired or as defaulted.

It is worth mentioning that the identification of an exposure as forborne does not represent an additional category of credit quality, but rather a qualitative and cross-cutting attribute to the existing classes of performing and non-performing exposures. Thus, there will be two distinct subcategories: (i) non-performing forborne and (ii) performing forborne. The transition from the classification as non-performing forborne to performing forborne takes place when all the following conditions are met:

- a) the classification does not entail the recognition of a default or impairment;
- b) the classification has been extended to the exposure for more than one year (the "cure period");
- c) no past due have been recognized after the classification as forborne.

The forbearance classification shall then be discontinued when (i) the contract is considered as performing, (ii) at least 2 years (the "probation period") have passed from the date the exposure was regarded as performing, (iii) significant regular amounts have been paid during at least half of the probation period and (iv) none of the exposures are more than 30 days past due (par. 176).

The above mentioned EBA ITS were adopted and approved by the European Community on 9<sup>th</sup> January 2015 and published in the Official Journal of the European Union on 14<sup>th</sup> February 2015; therefore, the new definitions of NPEs and FBE have been applicable to the financial reporting prepared from January 2015 onwards. In particular, they have been transposed in Italy on 20<sup>th</sup> January 2015, through the 7<sup>th</sup> update of the Bank of Italy Circular no. 272/2008. Despite the Italian legislation was already particularly severe, given the position of the Bank of Italy traditionally not inclined to accept the risk of excessive tolerance towards the debtors, the transposition of the EBA ITS has led to some changes in the previous categories of NPEs, namely bad debts (*sofferenze*), substandard loans (*incagli*), past due more than 90 days (*scaduti*) and restructured loans (*ristrutturati*). As described in the scheme below, the Bank of Italy currently envisages the use of five categories of credit quality, of which four different states of increasing severity in default. More specifically, the concepts of *incagli* and *ristrutturati* have been repealed and attributed, on first time adoption, to the new category of *inadempienze probabili* (unlikely to pay). Restructured loans have also been connected to the definition of forbearance measures, which is transversal to all credit risk classes.



Figure 1.2: Current Italian loans classification

Source: Rutigliano, M. (2016), Il bilancio della banca e degli altri intermediari finanziari

#### 1.2 DETERMINANTS OF NON-PERFORMING LOANS

In recent decades, especially in the aftermath of the global financial crisis, a substantial amount of literature has investigated the causes of non-performing loans, capable of explaining their evolution over time.

Empirical studies have generally proposed two main sets of determinants, namely macroeconomic and bank-specific factors. The first group links the quality of loans to the macroeconomic environment, highlighting the anti-cyclical behavior of the NPLs. Indeed, during the expansion phases of the business cycle, the higher real GDP growth leads to higher revenues and income for companies and households which are, therefore, able to comply regularly with their debt obligations. As a result, there will be a reduction in the level of bad debts. Conversely, a slowed or negative real GDP growth, during recession phases, will entail an increase in bad debts<sup>5</sup>. The fact that the real GDP growth is one of the main driver of NPLs was already pointed out by the European Central Bank in its Financial

<sup>&</sup>lt;sup>5</sup> Louzis, Vouldis and Metaxas (2012) pointed out that the increase in NPLs during recession phases is also due to the lower value of assets used as collateral and to the subsequent credit crunch related to the higher banks' risk aversion.

Stability Review of December 2011, in which it examined the trends in non-performing loan ratios over the decade 2000-2010, based on an econometric model for a panel of 80 countries. Results suggested that there was a relatively close correlation, especially in 2009 as shown in Figure 3, between the decline in GDP and the rise in non-performing loan ratios across all selected economies.





Source: ECB, Financial Stability Review, December 2011

Although worsening in the economic activity remains the primary risk for bank asset quality, there are additional macroeconomic factors which have been found to have an impact on the level of NPLs, namely the nominal effective exchange rate, inflation rate, money supply, unemployment, stock prices, lending interest rates, etc. More specifically, exchange rate depreciations might have a negative effect in countries characterized by a high degree of lending, denominated in foreign currencies, to unhedged borrowers<sup>6</sup>. Beck et al. (2013) found that, in countries with currency mismatches, currency depreciations tend to increase NPLs through negative balance sheet effects. Indeed, when exchange rate pegs fail during a crisis because of lacking foreign exchange reserves, there is an increase, in local currency terms, in the debt servicing costs of foreign currency denominated loans. If borrowers have no income in foreign currency to hedge themselves, defaults on loans denominated in foreign currency will tend to rise. Moreover, the unemployment rate and the real interest rate are positively correlated to the NPLs level (Bofondi and Ropele, 2011; Louzis et al., 2012; Messai, Jouini, 2013). The former because it negatively affects the cash flow streams of both individuals and firms, and the latter because it influences,

<sup>&</sup>lt;sup>6</sup> ECB Financial Stability Review, December 2011.

especially in the case of floating rate loans, the difficulty of borrowers in servicing their debts (i.e. rising interest rate payments which translate into a higher amount of NPLs).

Nkusu (2011), in its empirical analysis aimed at assessing the interactions among NPLs and macroeconomic variables in a system, argues that inflation and the credit to the private sector as a percentage of GDP<sup>7</sup> are among the most relevant determinants of bad loans. In particular, the impact of inflation can be positive or negative for a number of reasons: (i) a higher inflation can facilitate the repayment of debt since it reduces the real value of outstanding loans and it is related to low unemployment as explained by the Phillips curve, (ii) a higher inflation can make debt servicing more difficult given that it reduces real income when wages are sticky, and finally, (iii) a higher inflation may reduce the loan servicing capacity since it forces borrowers to adjust rates in order to keep their real return or to pass over increases in policy rates set by central banks. With regard to the private sector credit-to-GDP ratio, during expansion phases, it appears to be negatively correlated with current NPLs, but at the same time, it is expected to be positively related with the level of NPLs in the subsequent periods (due to potential loosening of lending standards).

Finally, share prices also tend to affect loan quality, especially in countries characterized by large stock markets compared with the size of the economy<sup>8</sup>. Specifically, the potential channels through which they may have an influence are: (i) the direct exposure of banks to the capital markets, (ii) wealth effects among borrowers, and/or (iii) decreases in the value of collaterals (e.g. to the extent that stock prices are correlated with house prices, a reduction in the value of collateral for home loans could negatively affect the quality of consumer loans<sup>9</sup>).

In addition to macroeconomic factors, which are ultimately treated as exogenous in econometric models, academic literature and empirical studies have suggested that bank-specific variables are also important determinants of non-performing loans. For example, Berger and DeYoung (1997), who studied the causality between cost efficiency, loan quality and bank capital across U.S. commercial banks, showed that managerial inefficiency (in the form of poor loan underwriting, monitoring of borrowers and appraisal of collaterals) is positively correlated with increases in NPLs. Conversely, there exists a negative correlation with banks' capitalization, explained by the "moral hazard" behavior

<sup>&</sup>lt;sup>7</sup> A proxy of the aggregate debt burden of households and businesses, and, therefore, also of banks' risk-taking behaviour.

<sup>&</sup>lt;sup>8</sup> ECB Financial Stability Review, December 2011.

<sup>&</sup>lt;sup>9</sup> Beck, R., *et al.* (2013), *Non-performing loans: What matters in addition to the economic cycle?* ECB Working Paper Series

of banks with low capital as they tend to increase the riskiness of their loan portfolio and, eventually, the level of NPLs in the long run. The same relationship has been confirmed by Keeton and Morris (1987), Salas and Saurina (2002) and Jimenez and Saurina (2006).

With regard to the mismanagement argument, the literature has connected it to the bank's performance and the policy of profit maximization. In particular, if banks' worse performance is regarded as a proxy of poor lending activities, there will be a negative correlation between earnings and bad debts (Godlewski, 2004; Louzis et al., 2012). On the other hand, however, a positive impact may also be possible in the case of banks that adopt liberal credit policies, pumping up current profits at the expense of problem loans in the future. Besides these factors, some authors (Salas and Saurina, 2002; Rajan and Dhal, 2003) have found a "size effect", that is, the larger the size of the bank the fewer the number of NPLs. It has also been shown that when banks are in part owned by the State, there is a drop in NPLs. Finally, the credit growth can be regarded as one of the potential causes of future NPLs (Bercoff et al., 2002; Louzis et al., 2012). Indeed, a rapid and excessive lending is generally related to impaired loans.

Below are summarized the determinants of NPLs, related studies and potential effects, as discussed in detail throughout the paragraph.

Determinants	Selected empirical studies	Correlation with NPLs			
Macroeconomic					
Real GDP growth	ECB FSR (2011)	Negative			
Exchange rate	Beck, et al. (2013)	Negative			
Unemployment rate	Bofondi and Ropele (2011), Louzis, <i>et al.</i> (2012), Messai, Jouini (2013)	Positive			
Real interest rate	Bofondi and Ropele (2011), Louzis, et al. (2012), Messai, Jouini (2013)	Positive			
Inflation	Nkusu (2011)	Negative/Positive			
Credit to private sector (% GDP)	Nkusu (2011)	Negative/Positive			
Share prices	Nkusu (2011)				
Bank-specific					
Managerial inefficiency	Berger and DeYoung (1997)	Positive			
Bank's capitalization	Keeton and Morris (1987), Salas and Saurina (2002) and Jimenez and Saurina (2006)	Negative			
Bank's performance	Godlewski (2004), Louzis, et al. (2012)	Negative/Positive			
Bank's size	Salas and Saurina (2002), Rajan and Dhal (2003)	Negative			
Credit growth	Bercoff, <i>et al.</i> (2002), Louzis, <i>et al.</i> (2012)	Positive			

Table 1.1: Summary of NPL determinants and related studies

#### 1.3 IMPACT OF NPLs ON BANKS' PERFORMANCE

Collecting savings and granting credit still remain the most relevant and profitable function performed by banks. As is known, they act as financial intermediaries, mediating the flow of funds between people who have a surplus and units that need funding. While performing this activity, banks are exposed to several risks, among which the most important one is the credit risk, which is related to the probability of loss from a debtor's default. However, even though NPLs are a permanent characteristic of a bank's balance sheet, inherent in the lending activity, having high and rising stocks of NPLs is one the first symptoms of banking crises. Indeed, many researchers found that loan quality is a significant statistical indicator of bank failures (Barr, 1994; Khemraj and Pasha, 2009; Lata, 2014) and that NPLs represent a substantial portion of total assets of insolvent financial institutions (Fofack, 2005). It is also argued that NPLs can result in efficiency problems for the banking industry (Krueger and Tornell, 1999). In fact, failing banks tend to be located far from the most efficient frontier, because they do not optimize portfolio decisions by lending less than what is demanded. What is more, evidence also shows that, even among banks that do not fail, there is a negative relationship between NPLs and performance efficiency.

Balasubramaniam (2013) highlights a series of NPLs implications on the banks' operations. First of all, the indirect cost of managing NPLs, since this involves a great deal of time and efforts of management which could instead focus on other income-generating activities. Second, the additional cost related to the recruiting of professional experts and the establishment of specialized departments for the management and recovery of NPLs. Third, the uncollected interest income from bad loans and, even more, the impact on future profits linked to missed opportunities to invest in some return-earning investments. Fourth, the additional cost to the bank due to the fact that the huge amount of NPLs constrains the bank's cash available and forces it to borrow money. Finally, the increased reputational risk entailed by the negative effects of NPLs on banks' credit rating.

In general, high levels of NPLs negatively affect all the areas of a bank's balance sheet, namely profitability, capital adequacy, asset quality, liquidity, and efficiency.

The most direct and immediate impact is clearly the reduction in the banks' profitability (especially when NPLs are written off and provisioning is too low), which passes through the higher provisions that banks are required to charge to the profit and loss statement when a loan loss becomes likely. Indeed, the higher the loan loss provisions<sup>10</sup> the lower the bank's net operating income will be. Profits are then further reduced by the increased amount of operating costs (e.g. personnel, legal and administrative expenses). On this point, core indicators used by academics and practitioners to asses banks' profitability are: return on assets (ROA), return on equity (ROE), return on tangible equity (ROTE)<sup>11</sup> and the net interest margin (NIM)<sup>12</sup>.

Another critical area affected by non-performing assets is the bank's capitalization. Indeed, having high NPLs, even though adequately provisioned, implies higher risk weights (NPLs have a 'risk weight' of 150 percent under the Basel 3 Standardized Method) and, consequently, weaker capital buffers. In particular, depending on the credit-risk approach implemented, the Basel framework recommends specific levels of the cost of capital for holding NPLs (Jassaud and Kang, 2015):

- For banks using <u>standardized methods</u>, the capital charge for NPLs is 12% of risk weighted assets (RWA), but only for those loans that are inadequately provisioned or not collateralized;
- For banks under the <u>Basel II IRB Advanced approach</u>, the capital cost is twofold:
  (i) the so-called "IRB shortfall", a capital deduction for the provision shortfall between Basel II expected losses and IFRS accounting provisions and (ii) a capital charge for gross NPLs based on banks' internal models;
- For banks under the <u>IRB foundation approach</u>, the capital charge is only represented by the "IRB shortfall".

With regard to the loan portfolio quality, there is a clear deterioration which is generally assessed based on a number of ratios (rather than on the simple stock of NPLs). In particular, the most common ones are:

$$Cost of risk (bps)^{13} = \frac{Annualized Loan Loss Provisions}{Total Loans to Customers}$$

<sup>&</sup>lt;sup>10</sup> Loan Loss Provisions are calculated by adding provisions for credit losses, releases of provisions and recoveries, direct write-off of loans and advances and other loan loss provisions.

<sup>&</sup>lt;sup>11</sup> This ratio is preferred to the return on equity (ROE), because it better reflects the true operational profitability of a bank and its ability to absorb losses. It is computed dividing the net income by the tangible equity, which is the company's book value adjusted for intangible assets and goodwill.

<sup>&</sup>lt;sup>12</sup> It is the ratio of net interest income to the average assets (interest earning assets). It complements ROA and ROE as a useful indicator of effectiveness and stability of banks' operations and it is even superior in illustrating how successfully banks manage their interest earning assets, since it has the tendency to decline prior to the difficulties in the banking sector (Saksonova, 2014). It is clear that, when banks have high levels of NPLs, their NIM will go down since the interest bearing assets are reduced by NPLs.

<sup>&</sup>lt;sup>13</sup> It is one of the risk indicators of a bank's assets: the lower the ratio, the lower the riskiness of bank assets.

# $Texas \ ratio^{14} = rac{Net \ NPEs}{Tangible \ Equity}$

 $Gross NPEs \ ratio \ (\%)^{15} = \frac{Gross \ NPEs}{Total \ Loans \ to \ Customers}$ 

$$NPE \ Coverage \ ratio^{16} = \frac{Loan \ Loss \ Provisions}{Gross \ NPEs}$$

The last two ratios may also be computed, gross or net of provisions, for each of the loan quality categories, i.e. performing ("in bonis"), past due/ overdue exposures, unlikely to pay and bad loans. It is worth mentioning that a low coverage ratio does not necessarily entail a risk of under-provisioning, since it could also reflect rigorous lending practices or a strong insolvency framework (Mesnard, *et al.*, 2016). Finally, banks suffer also from liquidity and efficiency problems. Weaker balance sheets imply, indeed, higher funding costs (adversely affecting equity valuations), because of worsening investor risk perceptions, and therefore, reduced funds available for new lending. This results are reflected in a deterioration of liquidity ratios, such as the commonly used loan-to-deposit ratio (LTD), which is calculated by dividing the bank's total customer loans by its total deposits, and of efficiency ratios, among which the most relevant one is the cost income, basically the ratio between operating costs and operating income.



Figure 1.4: Implications of High NPLs for Bank Performance in the Euro Area

Source: Aiyar, et al., A Strategy for Resolving Europe's Problem Loans, 2015

<sup>&</sup>lt;sup>14</sup> The "Texas ratio" measures a bank's likelihood of failure by comparing its bad assets to available capital. A ratio above 100% indicates that a bank's capital cushion is no longer sufficient to fully absorb potential losses from bad loans. The ratio has been developed in the late 1980s when many banks in Texas experienced failures due to relaxed lending standards and overextended credit to the booming energy and real estate sectors. In 1989, more than 20% of the banks had a ratio greater than 100%. (Jassaud and Kang, 2015).

<sup>&</sup>lt;sup>15</sup> Gross NPEs are defined as net NPEs plus loan loss provisions (reserves).

<sup>&</sup>lt;sup>16</sup> In the case of performing loans, the coverage ratio is calculated as the ratio of generic provisions to the loans.

The figure above shows the impacts of high stocks of NPLs for Euro Area banks, over the period 2009-2013. As we can see, data confirm that banks with higher NPLs tend to be less profitable, have weaker capital ratios, higher funding costs and reduced lending volumes (Aiyar, *et al.*, 2015).

#### 1.4 IMPACT OF NPLs ON THE REAL ECONOMY

Considering the fact that banks are the most important institutions of an economy, given their critical financial intermediation function, the severity of the feedback effects between the real and financial sectors is not surprising. In particular, the main channel through which NPLs negatively affect the economic activity is represented by the credit supply channel. As illustrated in the previous section, banks with high and rising NPLs tend to lend less<sup>17</sup>, since they are more risk averse and unwilling to grant new loans due to their deteriorating balance sheets. This phenomenon is called the "credit crunch" problem and it is, indeed, characterized by a restriction in the supply of credit (even independently of a sudden change in interest rates) and/or by an increase in lending interest rates, which consequently affect the growth prospects of viable firms. Above all, the SMEs are the most affected, as they are generally more dependent on bank funding, and this is of particular concern for many European countries in which the backbone of the economy is made up of families and small and medium-sized companies (Aiyar, *et al.*, 2015). Moreover, high levels of NPLs undermine the transmission mechanism of monetary policy, because of the general dependence of credit supply on banks' lending behavior.

A growing literature concentrates on the linkages between NPLs and the real economy. For example, Diwan and Rodrik (1992) explain the credit crunch as a consequence of the increased uncertainty around the banks' capitalization which is, in turn, reflected in a higher risk premium on banks' funding and, therefore, in higher lending rates. Nkusu (2011), in its panel vector autoregressive (PVAR) model over a sample of 26 advanced countries, suggests that increases in NPLs trigger a downward vicious spiral, in which banking system distress and the decline in economic activity reinforce each other. The same results have also been confirmed for the CESEE region by Klein (2013), who

<sup>&</sup>lt;sup>17</sup> Sometimes high NPLs are associated not only with reduced lending volumes but also with a poorer distorting capital allocation. Indeed, banks tend both to delay loss recognition, waiting for economic growth to improve their NPLs ratios, and to focus more on loans which are likely to become non-performing, rather than on loans for new, healthy projects (Deroose, S., 2016).

indicates that rising NPLs have a significant impact on credit, GDP growth rate, unemployment and inflation, hence supporting the idea that a resilient financial system is a necessary condition to pursue a sustainable economic growth.

The feedback effects from NPLs to the real economy may also pass through non-credit supply channels (Klein, 2013). For instance, individuals may be more reluctant to consume and spend money to improve their houses (given the risk of losing them), as well as firms with huge debt burden may have less incentive to borrow and invest in new projects, given the higher debt-servicing obligations.

Finally, it's worth noting that high stocks of NPLs generally lead to merger waves in the banking industry, since banks try to strengthen their capitalization and asset quality and to earn sustainable revenues and net income.

#### 1.5 MANAGEMENT OF NON-PERFORMING LOANS

In recent decades, the sharp increase of NPLs has had a massive impact on banks' cost of risk, profits and capitalization, highlighting, at the same time, their difficulties and lack of preparation both in the internal enhancement and in the direct disposal of doubtful debts. Even though some large banking groups have proven to be more active in handling the problem, through the spin-off of entire business units in dedicated newly formed companies or through the sale of non-core assets, many other financial institutions have, instead, maintained a traditional recovery management, experiencing problems of efficiency and effectiveness. Indeed, by lacking a proper structure specialized for portfolios cluster, many banks were unable to exploit economies of scale and, on the other hand, by not having adequate capital and human resources to deal with the constant increase of bad loans, they have also wasted many chances of cash collections<sup>18</sup>.

In general, for a proper management and valorization of NPLs, an integrated approach shall be adopted, which provides for a bottom-up portfolio analysis (clustering into homogeneous segments<sup>19</sup>, performance analysis and benchmarking) and a top-bottom analysis of the functioning model (identification of the guidelines, KPI and business

<sup>&</sup>lt;sup>18</sup> PwC (2011), La gestione strategica delle sofferenze bancarie.

<sup>&</sup>lt;sup>19</sup> By type of borrower (corporate or individuals), nature of loan (senior, mezzanine, secured or unsecured, asset back loans, PIK and revolving facilities), type of guarantee and asset class (real estate, stocks, state guarantees), profile (exposures, internal rating, probability of default, provisions), etc.

processes recognition, information systems valuation and gap analysis with respect to market best practices), in order to identify the best strategies for each segment.

Once an overview of the current situation has been outlined, the next step is the identification of the possible viable solutions, which differ from one another based on the degree of outsourcing adopted. Starting from the lowest level, a bank may opt for one of the following strategies (the pros and cons of which are outlined in the following subparagraphs): (i) internal management, (ii) servicing transfers, (iii), joint ventures, (iv) direct sales and (v) the so-called "bad bank".

In making such a "make, buy or sale" decision, banks shall evaluate the impact on funding, capital relief, cost, feasibility, profits and timing<sup>20</sup>. According to Rottke and Gentgen (2008), whose paper approaches the problem of NPLs workout from a transaction cost-based perspective<sup>21</sup>:

- For performing loans, whose degree of specificity of servicing is low, banks should outsource the servicing activity to a third party entity;
- For non-performing loans with collaterals of high assets and site specificity, own workout management is recommended, as the discounts on the outstanding debt balance would be too high;
- For non-performing loans with collaterals of low assets and site specificity, a market solution is recommended, either via disposal of the NPLs to an investor or outsourcing to an external third party workout manager.

Scardovi (2016), in its book on the "WHAM" (a workout management which is both holistic and active in nature) approach to credit workout, suggests instead that the identification of the best recovery strategy involves mainly the computation of the net present value of the portfolio. The latter (the theoretical exit value associated to the recovery strategy) should be compared with the fair value and with the market value (the fair value is assumed to be always higher than the market value). In case the NPV is higher than the fair value, the internal management strategy is prioritized; when the NPV is instead lower than the fair value but greater than the market value, the current recovery strategy could not be the best option and the bank should evaluate alternative strategies,

<sup>&</sup>lt;sup>20</sup> Brenna, G., et al. (2009), Understanding the bad bank. McKisney & Company Article

<sup>&</sup>lt;sup>21</sup> Transaction costs are the costs associated to the division of work. According to Williamson, a transaction occurs when a good or service is transferred across a technologically separable interfaces. Among the variables that describe a transaction, a focus is set on the specificity (human capital, asset and site specificity are taken into account), which describes whether an asset or a service are only or much more valuable in the context of a specific transaction (Rottke and Gentgen, 2008).

such as the direct sale of the NPL portfolio to an investor. Finally, whenever the NPV of the portfolio is lower than the market value, this means that the current recovery strategy is destroying value and that the bank would then be better off by selling the loans.

#### 1.5.1 INTERNAL MANAGEMENT

The "make" decision is represented by the in-house workout of NPLs, since the originating bank continues to manage its bad loans internally, through dedicated restructuring and credit recovery units. The reasons behind this choice lie mainly in the need to directly monitor troubled assets (for example when some of them have a "strategic" or "relational" value) and in the awareness of being provided with an efficient organizational structure and with specialized resources.

The advantages and considerations of a continued in-house workout of NPLs are<sup>22</sup>:

#### Pros:

- High probability to maximize gross recoveries of loans due to better understanding and longer history of dealing with the loans;
- High probability to result in a higher NPV recovery for loans subject to long recovery periods;
- Possibility to retain customers through restructuring and return to performing status;
- Deductibility of reserves for profits tax purposes

#### Cons:

- No immediate reduction in provision;
- Recoveries will be spread over time;
- Loans will still require mandatory provisions/write offs pursuant to Regulatory requirements;
- Significant resources required to effect recovery;
- Accrued interest income on NPLs is required for profits tax purposes

<sup>&</sup>lt;sup>22</sup> Sekowski, J. (2009), Sale of non-performing loans. PwC publications

#### 1.5.2 SERVICING TRANSFERS

The "buy" solution is one of the most applied, especially since the global financial crisis has forced banks to resize their role, returning to focus on their core lending activities, and therefore to look for partnerships with specialized operators for the management of NPLs portfolios. This strategy is preferred, unlike the previous case, when originating banks do not have appropriate internal structures and expertise and when they do not want to dispose of the assets underling the NPLs (for example, to avoid capital effects)<sup>23</sup>. Under a specific contractual arrangement, the original lender sells the rights to service an existing loan to a third party servicer, which is in turn responsible for the collection and administration of the NPL<sup>24</sup>. In addition, while the originating bank retains the loan in its financial statement, as well as the associated income (to the extent collected), the servicer is compensated with a specific fee.

The key advantages of this option are represented by a reduction in operating costs (or rather by the conversion of fixed costs into variable, as costs are related only to the recovery activities carried out), an increase in the performance and transparency of the outsourced NPLs portfolio and, above all, by a strong improvement in the asset quality. The main difficulty is, instead, the launch of the partnership itself.

#### 1.5.3 JOINT VENTURE

A specific version of the "buy" decision is the establishment of a joint venture structure, in which, as illustrated below, the originating bank holds an equity stake alongside the investor. Moreover, while the bank contributes the NPLs portfolio, the investor co-operates with cash and the relevant skills, experience and competencies for the debt servicing (Rottke and Gentgen, 2008). The economic interest in the NPLs portfolio is then shared between the equity holders pro rata to their equity stakes or according to other methods (e.g. profit sharing), as agreed between the parties (Sekowski, 2009).

<sup>&</sup>lt;sup>23</sup> Olson, J. C. (2005), Insolvency Developments and Trends in China. Fifth Annual International Insolvency Conference. Heller Ehrmann

 $<sup>^{24}</sup>$  A servicer is responsible for both operational duties related to the credit collection and cash and payment services (*Special Servicer*) and for regulatory tasks, that is, the servicer has the obligation to verify that the transaction complies with the law in the interest of security holders and in general of the market (*Master Servicer*).



Figure 1.5: JV Arrangement Option

Source: Sekowski, J. (2009), Sale of non-performing loans. PwC publications

The pros of a 3<sup>rd</sup> party JV are mainly (i) the partial release of resources, (ii) the variety of options in structuring the deal, (iii) potential upside sharing and (iv) the opportunity to have external asset managers that can realize value for the bank. On the other hand, the main cons of this option are: (i) the difficulty in comparing bids, (ii) the risk of not achieving the derecognition of NPLS, (iii) lower transparency perceived than in direct sales and (iv) the reduction in bank returns due to investor expenses and its required rate of return (Sekowski, 2009).

#### 1.5.4 DIRECT SALES

The "sale" decision is represented by a true (outright) or synthetic<sup>25</sup> sale transaction in which the entire NPLs portfolio is transferred to investors (mainly investment banks, hedge



Figure 6: Outright Cash Sale Option

Source: Sekowski, J. (2009), Sale of non-performing loans. PwC publications

<sup>&</sup>lt;sup>25</sup> While both types of sales ensure the transfer of economic risks and benefits (economic ownership), under synthetic transactions the originating bank remains the nominal lender of record (legal ownership) and contractual party with the borrower (KPMG, *Draft of Analysis of the existing impediments to the sale of NPLs in Serbia*, December 2015).

funds, private equity and specialized operators), or to an SPV (Special Purpose Vehicle) entirely owned by third parties (as illustrated in Figure 6).

A direct sale is the most efficient alternative to solve, in a timely manner, the bank's accounting deficiencies. By selling the NPLs portfolio, the most immediate impact is clearly the reduction of operating costs and write-downs that inevitably raise profitability. At the same time, there is a positive effect on the bank's balance sheet, namely the reduction of risky assets and thus of the weighting coefficients for the calculation of the regulatory capital.

The pros and cons of a direct sale of NPLs can be summarized as follows (Sekowski, 2009): <u>Pros</u>:

- A reasonably quick process;
- Immediate release of resources which can be used for other purposes;
- Improvement in the liquidity ratios and capital adequacy position of the bank;
- Positive market perception that can results in a potential improvement in credit ratings and in the enhancement of the share price performance;
- Higher transparency perceived by investors (they may also pay a premium to enter a new NPL market)

#### Cons:

- No customer retention;
- Possible lower realizations than in-house management;
- Potential loss on disposal;
- Deep knowledge of investors audience and price expectations is required to attract their interest and create the necessary fair competition;
- Greater availability and accuracy of information is required

#### 1.5.5 BAD BANK

Since the global financial and credit crisis the notion of "bad bank" has become increasingly common, mentioned among the possible solutions to the problem of NPLs. But what is meant by "bad bank"? It is a special corporate vehicle (SPV or AMC, asset management company) established *ad hoc* by a government, a bank, or by private

investors, in order to isolate all the illiquid and risky assets of a bank or group of banks. It is usually a company with a mixed shareholder base, public and private, with a State's involvement below the 50% of the bank's share capital.

The mechanism behind a bad bank is simple. The bank divides its assets into two categories: on one hand the toxic assets (primarily bad loans) to be transferred into the bad bank, while on the other hand the good assets that represent the ongoing business of the core bank ("good bank")<sup>26</sup>. Once the bad securities have been isolated, a stock split is carried out, either in the form of subscription of preferred shares by the government, or that of ordinary shares that can be sold on the market. Subsequently, the bad bank will liquidate these bad assets when the difference between the market value and the nominal value will be diminished<sup>27</sup>. More specifically, NPLs are packaged through a securitization process into specific pools (the asset side of the SPV), according to their characteristics (type, maturity etc.); at the same time, the bad bank will finance the purchase of the NPLs by issuing senior, mezzanine and junior tranches (the liability side of the SPV) of NPL-backed securities to be sold on the market.

The reason behind the establishment of a bad bank is to allow banks to refocus on their core business of lending, as well as investors to assess banks' financial health and performance with greater certainty (information asymmetries about the value of the assets are reduced) and lower monitoring costs (Brenna, G., *et al.*, 2009). In addition, such a structure ensures that banks can benefit from improved capital ratios (they no longer have to allocate capital to cover possible loan losses) and liquidity ratios (improved access to deposit and funding markets), while in the meantime, the AMC tries to maximize, in a determined period of time, the recovery value of the high risk assets.

With regards to the criticisms of the bad bank model, the most common ones are related to its potential negative effects on the bank's credit risk management. Indeed, AMCs by their nature only assist in the disposal of a problem, but they do nothing to prevent the occurrence of the same problem in the future, providing, instead, incentives for irresponsible lending (Campbell, 2008). Moreover, in the case where AMCs are public institutions, they may have access to public funds, thus indicating the existence of a state subsidy for banks and, consequently, moral hazard behaviours and potential political interferences (Osuji, 2012).

<sup>&</sup>lt;sup>26</sup> Brenna, G., et al. (2009), Understanding the bad bank. McKisney & Company Article

<sup>&</sup>lt;sup>27</sup> Borsa Italiana (2009), Cos'è una bad bank? <u>http://www.borsaitaliana.it/notizie/sotto-la-lente/bad-bank.htm</u>

There may exist several versions of this structure: system or private, specialized in a single asset class portfolio or in different clusters of the same asset, etc. In general, reference is made to a "public bad bank", although in recent years several financial institutions have adopted the scheme of a private entity (NewCo) which separates non-core and non-performing assets from the remaining operations. The main difference is the absence of a State participation, which is instead replaced by funds or specialized operators. Although there is no empirical evidence proving the greater efficiency and effectiveness of a private solution than the public one, it is usually argued that private AMCs impose larger haircuts on the price paid in the acquisition of the bad assets, thus avoiding the creation of "zombie banks" and "zombie bad banks" (Gandrud and Hallerberg, 2014).

McKinsey & Company, in a 2009 report, has identified four basic schemes for the bad bank, primarily determined by the choice of whether or not to keep the troubled assets on the balance sheet. Such models can be summarized as follows:

- *On-balance sheet guarantee*: in this case the bank protects part of its asset portfolio with an external guarantee (typically a second-loss guarantee from the government). Even though such solution can be implemented in a timely manner, it does not provide for the "deconsolidation" of bad assets, thus resulting in only limited risk transfer;
- *Internal restructuring unit*: the bank creates an internal bad bank to hold, manage and sell non-performing assets (this solution is generally implemented when they represent a sizable portion of the balance sheet). Although there is an increase in the transparency of bank's performance, such model still lacks of an efficient risk transfer;
- *Special-purpose entity:* in this case the bank transfers its bad assets into a special purpose vehicle, generally government-backed. It is preferred for a small and homogeneous cluster since the deal structuring is a complex process;
- *Bad-bank spinoff:* the most effective and widely used model, especially in systemic crises. In this case, the bank establishes a new, legally independent banking entity, in which all toxic and non-core assets are transferred. Such solution guarantees the maximum risk transfer, increases the bank's flexibility and attractiveness towards outside risk-averse investors. However, it also implies a higher structural and operational complexity which typically require the government's support and intervention.

## CHAPTER 2

## VALUATION OF NON-PERFORMING LOANS

#### 2.1 IAS 39: THE AMORTIZED COST APPROACH

Banks that adopt international accounting principles (IAS-IFRS) endorsed by the EU are subject, among others, to the provisions of IAS 39 (and the future IFRS 9), which outlines the requirements for classification and measurement, impairment, hedge accounting and derecognition of financial assets and liabilities.

More specifically, loans and receivables are one of the category in which financial assets can be classified, provided that they are not derivate instruments, they are not quoted in an active market and there is no provision for subsequent sale.

Following the initial recognition, bank loans shall be measured at amortized cost, since these kind of assets are held to collect contractual cash flows, which are solely payments of principal and interest on the principal amount outstanding<sup>28</sup>. This approach, also known as the effective interest method, provides that the loan gross book value (GBV) is equal to the discounted sum of future expected cash flows  $FCF_t$  through the expected life t of the financial instrument<sup>29</sup>. The discount rate i is the original effective interest rate, which is defined, under IAS 39, as "the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to the net carrying amount of the financial asset or liability" (i.e. the internal rate of return, IRR).

$$GBV = \sum_{t=1}^{n} \frac{FCF_t}{(1+i)^t}$$

 $<sup>^{28}</sup>$  IAS 39 – Financial Instruments: Recognition and Measurement [http://www.iasplus.com/en/standards/ias/ias39]. More precisely, the conditions for the classification of financial assets as subsequently measured at amortized cost or fair value, namely the entity's business model for managing the financial assets and the contractual cash flow characteristics of the financial assets, have been introduced in October 2010 with the second version of the IFRS 9.

<sup>&</sup>lt;sup>29</sup> The principle states that, if it cannot be reliably determined, then the contractual life should be used.

According to this accounting standard, at the end of each reporting period, banks are required to assess if there is any objective evidence<sup>30</sup> of loan impairment and uncollectibility; that is, if in the judgment of management, the recovery of all amounts (principle and interest), contractually due on a loan, is in doubt. In that case, impairment losses shall be calculated, as the difference between the loan's carrying amount and the expected recoverable amount (i.e. the present value of estimated future cash flows resulting from restructuring or liquidation), and recognized in the profit and loss statement.

An exposure classified as non-performing clearly have "objective evidence" of impairment and thus necessitates an impairment assessment, either individually or collectively. Indeed, the mentioned process requires banks to determine (and then to clearly disclose) both when an individual/specific or collective/general loan loss provision should be made and the methods and parameters for its estimation<sup>31</sup>. An individual assessment is needed for those exposures (individual financial asset/debtor) deemed to be individually significant, on the contrary (e.g. for loans with limited amounts), collective estimations shall be conducted for homogenous groups of exposures with similar credit risk characteristics, indicative of the borrower's debt service capacity (e.g. type of exposure, maturity, past due status, default probabilities, industry and geographical area of the debtor, collateral type and associated Loan-to-Value ratio<sup>32</sup>). In general, "past due" loans are subject to collective estimations (provided that they meet the requirements of not individually significant exposure), whereas loan loss provisions for "unlikely to pay" and "bad loans" are determined either individually or collectively.

For individual assessments, banks shall estimate the expected future cash flows (size and time of expected payment) from exposures either in a going concern approach or in a gone concern approach. In the first case (i.e. the debtor continues its business activities), the estimated recoverable amount corresponds to the present value of debtor's expected future operating cash flows (excluding expected losses as a result of future events) discounted at

<sup>&</sup>lt;sup>30</sup> "Impairment triggers" are defined as one or more events, occurred after the previous assessment, which has or can have a negative impact on the borrower's debt service capacity and on the estimated future cash flows of the exposure. They should be appropriate for each loan asset class and regularly updated. Examples of such loss events are: macroeconomic shocks (e.g. decrease in property prices, increase in the unemployment rate and adverse changes in interest rates or exchange rates) and loan-specific triggers, such as a breach of contract, the forbearance request, the deterioration of the borrower's financial position and the classification of the loan as non-performing.

<sup>&</sup>lt;sup>31</sup> For all the footnotes of the paragraph: ECB, *Draft guidance to banks on non-performing loans*. September 2016. [https://www.bankingsupervision.europa.eu/legalframework/publiccons/pdf/npl/npl\_guidance.en.pdf]

 $<sup>^{32}</sup>$  It is the ratio of the loan amount and the appraised value of the collateral used for the loan. The higher the LTV ratio, the riskier the loan (which however entails a higher cost of borrowing)

the original effective interest rate<sup>33</sup>; in the second case, instead, it is given by the estimated future cash flows resulting from the sale of the collateral, net of all related liquidation costs and the market price discount to the property price at the time of liquidation (the so-called open market value)<sup>34</sup>. Examples of liquidation costs are legal costs, taxes, maintenance costs and all expenses incurred during collateral execution (consensual or non-consensual). The market price discount is instead applied to reflect the liquidity of the market and the liquidation strategy (the haircut increase in case of illiquid markets, uncertainty regarding the value assessment, movable properties etc.). In general, collateral valuation should be based on a market-based approach<sup>35</sup>, and only if impracticable or inappropriate, on an income-based or cost-based approach.

The expected cash flows can also reflect a realizable market price (expressed as a percentage of the gross book value of the loan or portfolio) in the event of a direct sale of NPLs, either secured or unsecured.

Moreover, the estimation of the future operating cash flows, under the going concern scenario, can be either performed through a detailed analysis with multi-period cash-flow projections<sup>36</sup>, or otherwise by using more simplified approaches such as the "steady state method" or the "two-step cash-flow method". In the former, future recurrent cash flows are approximated by applying multiples to adjusted EBITDA and then allocated to each exposure, whereas, in the latter, the recoverable amount is given by the sum of the present value of cash flows over the explicit forecast period and the terminal value (calculated either by applying a multiple to the final projected year cash flow or assuming the gone concern scenario).

With regard to the collective estimation of loan loss allowances (for the so-called "incurred but not reported losses", IBNR), the recoverable amount of a group of exposures is generally computed with formula-based approaches or statistical methods, based on the estimated contractual cash flows, the exposures in the group and the historical loss

<sup>&</sup>lt;sup>33</sup> For variable-rate loans, the discount rate is the current effective interest rate.

<sup>&</sup>lt;sup>34</sup> The ECB guidance identifies as examples of "gone concern scenario" when the exposure is significantly collateralized, when the expected future cash flows are low or negative or in the event of high uncertainty or insufficient information to perform the estimation. It is also worth noting that, even under the going concern approach, it is possible to exercise the collateral but only to the extent that it does not affect the future operating cash flows.

<sup>&</sup>lt;sup>35</sup> As highlighted by the ECB guidance, it reflects the estimated amount for which the asset should be exchanged between knowledgeable and willing parties in an orderly transaction. Under the cost approach, the value of the property is determined by the cost to replace or reproduce it, while, under the income approach, it is represented by the asset's net operating income discounted by the capitalization rate.

<sup>&</sup>lt;sup>36</sup> This approach is suggested in case of asset-based lending transactions or transactions involving incomegenerating businesses (e.g. shipping with long-term charter or project finance in which generated income is pledged).

experience for exposures with similar credit risk properties. Historical time-series (on default rates, exposures at default, collection timing and costs, etc.) should be properly adjusted for the current observable data and recent changes in the financial/economic conditions. Hence, the total amount of provisions is given by the sum of impairment losses for each group of exposures.

#### 2.2 THE BASEL FRAMEWORK

Alongside the accounting principles, banks are required to comply with regulatory and capital requirements set by the Basel framework, which is the global set of banking regulations (Basel I, II and III) developed by the Basel Committee on Bank Supervision, with the specific purpose of monitoring and ensuring the capital adequacy of the banking system.

Even though both accounting and Basel frameworks recognize the issue of credit risk and require professional judgment in implementing standards, they primarily differ in terms of intentions of regulation and methods applied to determine the amount of impairment losses. Indeed, while the focus of IFRS is the fair presentation of the current banks' financial position and performance, the Basel approach is more conservative and forward-looking since it aims at aligning banks' risk-taking behavior and capitalization (Gaston and Song, 2014). The second and most important issue is that, while IAS 39 estimates impairment losses based on an incurred loss model (i.e. only incurred losses matter and future losses are not taken into consideration), within the Basel regulatory capital framework banks are required to apply an "expected loss" approach to credit loss provisioning. In particular, under Basel II/Basel III, in case of adoption of the internal rating-based (IRB) approach to credit risk<sup>37</sup>, expected credit losses are estimated prospectively (12-month horizon) on the basis of the following formula:

$$EL = PD * EAD * LGD$$

<sup>&</sup>lt;sup>37</sup> Banks using the standardised approach to credit risk do not determine a regulatory expected loss and impairments go directly into regulatory capital. Capital requirements are based on predetermined risk weights depending on the kind of counterparty and external rating (only for exposures to banks and corporates) assigned by an external credit-assessment institution. Non-performing exposures receive, for example, a risk weight of 150% if specific provisions are less than 20% of the unsecured portion of the exposure. The weighting is reduced to 100% for the unsecured portion if specific provisions are greater than 20% of the unsecured exposure, gross of specific provision. [https://www.fitchratings.com/gws/en/fitchwire/fitchwirearticle/New-IFRS-Rules?pr id=841615].

Where *PD* (Probability of Default) is the probability of default of the borrowers in each rating class on a one year time horizon, *EAD* (Exposure at Default) is the credit amount at the time of default and *LGD* (Loss Given Default) is the magnitude of likely loss in case of a debtor's default, expressed as a percentage of the exposure at default. More specifically, under the advanced internal rating-based (AIRB) approach, all the above quantitative inputs, also known as risk parameters, rely on bank's internal data, whereas in the foundation internal rating-based (FIRB) approach banks provide their own estimate for the PD only, using prudential values set by supervisors for the other components.

A variety of statistical methods exist for the estimation of PD, including both parametric models, such as linear regression and discriminant analysis, and nonparametric models like neural networks and decision trees. Alternatively, PDs can be estimated using historical default data or company level information (e.g. Merton model).

As far as LGD is concerned, it is generally computed as the ratio of losses (including loss of principal, carrying costs of non-performing loans and workout expenses), over the exposure at the time of default (Schuermann, 2004). More specifically, there a four broad definitions (and therefore estimation methods) of LGD, namely *market*, *workout*, *implied market* and *statistical* LGD<sup>38</sup>. The *market* LGD is the ratio of the market prices of defaulted bonds or defaulted loans, following the default event, to their par value, *workout* LGD is the present value of estimated cash flows from the workout and collection process, while *implied market* LGD is derived from the credit spreads on currently traded non-defaulted risky bonds. Finally, *statistical* LGD is estimated using regression on historical LGDs.

Expected loss provisioning (unexpected losses are covered by capital!) is then directly linked to capital requirements (Gaston and Song, 2014). While under the standardized approach general provisions<sup>39</sup> can be included in Tier 2 capital subject to a limit of 1.25% of risk weighted assets (RWA), this is no longer possible under the IRB approach. Indeed, banks should first compare the amount of total provisions (both specific and general) with the total expected loss amount. If the latter exceeds provisions, the difference, called "IRB Provision Shortfall", must be deducted from Common Equity Tier 1 (CET1) capital, on the contrary, if total eligible provisions exceed the total expected loss amount, the excess (of

<sup>&</sup>lt;sup>38</sup> <u>https://www.crisil.com/pdf/global-offshoring/Credit\_Risk\_Estimation\_Techniques.pdf</u>

<sup>&</sup>lt;sup>39</sup> Specific provisions, which are set aside against identified impaired assets, are deducted from deteriorated exposures and directly impact Tier 1 capital due to reduced retained earnings.

general provisions only) is added to Tier 2 capital, subject to a limit of 0.6% of RWA (at national discretion, a lower limit than 0.6% may be applied).

#### 2.3 FROM IAS 39 TO IFRS 9

The effects of the global financial crisis have triggered an intense revision process of accounting standards. In particular, under the pressures of the Financial Stability Board (FSB), G-20, and the Basel Committee on Banking Supervision (BCBS), in 2008 the IASB started developing a new accounting standard, called IFRS 9, which is expected to replace IAS 39 in its entirety, for the accounting periods beginning on or after January 1<sup>st</sup> 2018. Actually, given the request for a quick improvement, the revision process has been divided into four phases, producing different versions of IFRS 9 until the final one dated July 2014. This amendment process, which started under the greater project jointly conducted between the IASB and FASB<sup>40</sup> for the convergence of IFRS and US GAAP, has been primarily undertaken to substitute the current incurred loss model with a more forward looking model, based on expected credit losses. This because the current approach has been highly criticized for promoting procyclicality and a "too little and too late" impairment loss recognition (since it requires banks to book losses only when there is an "objective evidence" of impairment). On the contrary, enforcing an adequate and timely provisioning is critical to ensure that banks have sufficient cushions to absorb potential losses (and this is at the base of credit risk and capital adequacy assessment of bank supervisors).

In this respect, the new IFRS 9 is expected to better align regulatory and accounting requirements and, therefore, the level of provisions generated for financial reporting purposes, on one hand, and prudential supervision purposes, on the other hand (Gaston and Song, 2014). Under the new expected credit loss model, banks are required to recognize loan loss provisions depending on the credit quality deterioration or improvement since initial recognition<sup>41</sup>. In particular, the new standard provides a "three stage" approach (as shown in Figure 2.1) for impairment, according to which, for those loans whose credit risk

<sup>&</sup>lt;sup>40</sup> The IASB (International Accounting Standards Board) is the independent standard-setting body of the IFRS Foundation, while the FASB (Financial Accounting Standards Board) is the designated private sector non-profit organization, responsible for the development of the generally accepted accounting principles (GAAP) within the United States.

<sup>&</sup>lt;sup>41</sup> PwC (2014), *IFRS 9 – Expected credit losses*. [<u>https://www.pwc.com/us/en/cfodirect/assets/pdf/in-depth/us2014-06-ifrs-9-expected-credit-losses.pdf</u>]
is low or has not had a significant increase since initial recognition (<u>Stage 1</u>), banks shall calculate expected credit losses (ECLs) over a time horizon of 12 months, which represent the portion of the lifetime expected credit losses that result from potential default events on the financial instrument within 12 months after the reporting date (i.e. the entire credit loss multiplied by the probability of occurring in the next 12 months).





Source: PwC (2014), IFRS 9 - Expected credit losses

In the event of a significant increase in loan credit risk<sup>42</sup>, either on an individual or collective basis, lifetime expected credit losses are computed as the weighted average of credit losses (equal to the difference between all contractual cash flows and all the cash flows banks expect to receive, namely all cash shortfalls, discounted at the original effective interest rate), throughout the expected life of the financial instrument, with weights equal to the probability of default (PD). However, if there is no objective evidence of impairment (underperforming loans), interest revenue is still computed on loan's gross carrying amount (<u>Stage 2</u>), otherwise, if more information emerges so that the loan is classified as non-performing (<u>Stage 3</u>), the logic applied is again that of incurred losses and, therefore, interest revenue is measured at amortized cost (on loan's carrying amount net of provisions). Obviously, the transition from one stage to another is symmetrical, given that any loans can go back to previous stages in the event of a significant improvement in credit quality. In general, the estimation of ECLs shall reflect three critical

<sup>&</sup>lt;sup>42</sup> The new standard introduces a rebuttable presumption that the credit risk on a financial asset has increased significantly since initial recognition when contractual payments are more than 30 days past due. Obviously, this simplification does not apply if credit risk has already increased before (EY, 2014).

aspects<sup>43</sup>, namely (i) an unbiased and probability-weighted amount based on a range of possible outcomes (differing in timing and amount of cash flows and estimated probabilities), (ii) the time value of money (expected cash flows shall be discounted at the effective interest rate or an approximation thereof) and (iii) reasonable and supportable information, available without undue cost or effort, which may affect the credit quality of loans. They should include past events, current and expected future economic conditions (e.g. credit rating changes, price changes, etc.).

The formula generally applied for the computation of 12-month expected credit losses is the same used under the Basel II internal rating-based (IRB) approach, that is:

$$ECL_{12-months} = PD_{12-months} * LGD_{12-months} * EAD_{12-months}$$

The estimation of lifetime expected credit losses involves instead credit risk parameters for the *t*-th period (where  $MPD_t$  is the marginal default probability and  $DF_t$  the discount factor)<sup>44</sup>, as follows:

$$LECL_t = \sum_{t=1}^{T} MPD_t * LGD_t * EAD_t * DF_t$$

Banks can clearly leverage their existing credit risk management systems and use their Basel estimates of PD and LGD to model expected loss under IFRS 9<sup>45</sup>. However, significant adjustments will be required with respect to, among others, the time horizon (one year vs. 12-months or lifetime), the observation period (five years for retail exposures and seven years for corporate, bank and sovereign exposures vs. not specified period), and the statistical approach (through-the-cycle vs. point-in-time estimates<sup>46</sup>).

In short, the new expected loss model will bring about significant positive changes in the banks' financial reporting, namely early recognition of credit losses, increased transparency on loan valuations and greater convergence between Basel and IFRS standards. However, until the effective date, supervisors will have to bridge any gaps

<sup>&</sup>lt;sup>43</sup> EY (2014), Impairment of financial instruments under IFRS 9. [http://www.ey.com/Publication/vwLUAssets/Applying IFRS: Impairment of financial instruments under \_IFRS\_9/%24FILE/Apply-FI-Dec2014.pdf]

<sup>&</sup>lt;sup>44</sup> The *LECL* for credit-impaired in Stage 3 shall be based on a probability of default equal to 1.

<sup>&</sup>lt;sup>45</sup> Tata Consultancy Services (2015), *IFRS 9 Expected Loss Impairment Accounting Model versus Basel Framework*. [http://www.tcs.com/SiteCollectionDocuments/White-Papers/Expected-Loss-0515-1.pdf]

<sup>&</sup>lt;sup>46</sup> Through-the-cycle estimates are based on historical credit loss events and experience over the entire economic cycle, whereas point-in-time estimates are based on information, circumstances and events at the reporting date (EY, 2014).

between the two frameworks in order to ensure sufficient and timely loan loss provisioning.

### 2.4 THE FAIR VALUE APPROACH

An alternative loan valuation method, discussed among academics, is the fair value approach. Even though a fair value of loans, as intended in the IFRS  $13^{47}$ , is difficult to observe since there is no secondary active market in which they trade, it can be computed by applying the standard asset-pricing technique, as for any other financial asset. In particular, the fair value of a loan  $P_0$  can be expressed as follows<sup>48</sup>:

$$P_0 = \sum_{t=1}^{n} \frac{CF_t}{(1+r_t)^t}$$

Where  $CF_t$  represents the cash flow a bank expects to receive from a loan, in each period, including potential prepayments and/or payment shortfalls, while the discount rate  $r_t$  is the investors' required return, adjusted for any credit and prepayment risk, on a loan with similar characteristics of that being valued.

Compared with the amortized cost method of IAS 38, the fair value approach considers all future loan cash flows, that is, contractual payments, lifetime expected credit losses and prepayments. In addition, while under the first method the loan value does not reflect movements in market interest rates since initial recognition (given that future cash flows are discounted at the original effective interest rate), the fair value approach enables to reflect interest rate gains and losses resulting from changes in market interest rates (in particular, the fair value is highly likely affected in case of long-term, fixed-rate loans). Another difference is represented by the impact of information asymmetries between investors and originating banks (Knott, S., et al. (2014): in case of informationally opaque loans (and this is generally the case of non-performing loans), indeed, the amortized cost approach tends to result in higher valuation than the general loan "exit price", if sold. On the contrary, measuring loans based on a fair value approach, when information about debtors is asymmetric, may even create distortions in banks' lending decisions.

<sup>&</sup>lt;sup>47</sup> "The price at which an orderly transaction to sell the asset or to transfer the liability would take place between market participants at the measurement date under current market conditions" [http://www.iasplus.com/en/standards/ifrs/13]

<sup>&</sup>lt;sup>48</sup> Knott, S., *et al.* (2014), *Understanding the fair value of banks' loans*. Bank of England Financial Stability Paper 31

# CHAPTER 3

# THE ITALIAN NPL MARKET

### 3.1 OVERVIEW OF THE ITALIAN BANKING SYSTEM

The Italian banking system is essentially small, highly fragmented and overburdened by bad loans, compared with other main European countries.

Considering the size of the sector, a commonly used indicator to measure it is the so-called financial intermediation ratio (Cosma and Gualandri, 2012), which is expressed as an economy's financial assets (or directly the banking assets) divided by its gross domestic product (GDP). Even though there has been a growing trend in the weight of the financial system over the last three years (as shown in Table 3.1), the Italian sector is still smaller than that of Germany, France and Spain (similar results are obtained considering the outstanding amounts of total financial assets, financial assets of the financial sector, financial assets of monetary financial institutions and financial assets of non-financial sector<sup>49</sup>).

Country	2013	2014	2015	
Financial assets/GDP				
Euro Area	n.a.	11.01	11.14	
Italy	7.60	7.75	7.76	
Germany	7.99	8.10	8.10	
France	11.31	11.74	12.02	
Spain	8.91	8.84	8.45	
Financial assets of the financial sector/GDP				
Euro Area	n.a.	6.47	6.55	
Italy	3.84	3.93	3.91	
Germany	4.56	4.65	4.58	
France	5.90	6.13	6.18	
Spain	4.48	4.34	4.07	

 Table 3.2: Financial Intermediation Ratio

<sup>49</sup> The financial sector includes non-financial corporations, pension funds, monetary financial institutions (MFIs) and other financial intermediaries, while the non-financial sector includes non-financial corporations, households, non-profit institutions and general government. MFIs are central banks, resident credit institutions as defined in Community law, and other resident financial institutions whose business is to receive deposits and/or close substitutes for deposits from entities other than MFIs and, for their own account (at least in economic terms), to grant credits and/or make investments in securities (ECB definition, https://www.ecb.europa.eu/stats/money/mfi/general/html/index.en.html)

Financial assets of MFIs/GDP			
Euro Area	<i>n.a.</i>	3.13	3.12
Italy	2.73	2.71	2.64
Germany	3.06	3.06	2.97
France	3.99	4.12	4.15
Spain	3.29	3.11	2.91
Financial assets of non-financial sector/GDP			
Euro Area	n.a.	1.94	2.00
Italy	1.00	1.00	1.03
Germany	1.30	1.29	1.36
France	2.71	2.85	3.01
Spain	1.96	1.98	1.95

Source: Processing of European Central Bank data - Statistical Data Warehouse - Euro Area Accounts

The same evidence is pointed out also by the banking intermediation ratio (Cosma and Gualandri, 2012), which can be assessed by the ratios of total loans and total deposits to GDP, which were in Italy respectively equal to 1.40 and 1.90 at December 2015, compared to the 2.28 and 2.17 in the Euro Area as a whole (Table 3.2).

Country	2013	2014	2015
Total Loans/GDP			
Euro Area	п.а.	2.31	2.28
Italy	1.48	1.45	1.40
Germany	1.73	1.67	1.69
France	1.96	1.95	1.95
Spain	2.17	2.09	1.92
Total Deposits/GDP			
Euro Area	n.a.	2.15	2.17
Italy	1.86	1.86	1.90
Germany	1.96	1.90	1.91
France	2.30	2.37	2.48
Spain	2.33	2.17	2.09

Table 3.2: Banking Intermediation Ratio

Source: Processing of European Central Bank data - Statistical Data Warehouse - Euro Area Accounts

The fact that the banking system is small is clearly related to the low development of the entire financial system than in other countries (although the percentage of banking assets over total financial assets is in line with the average of the Euro Area, namely 35%<sup>50</sup>). In fact, the Italian stock market capitalization, as a percentage of GDP, is approximately 35%<sup>51</sup>, which is considerably lower compared with the 51% of Germany, 66% of Spain and 86% of France<sup>52</sup>. On the other hand, however, the banking sector has always played a central role in the financing of firms, precisely because of this underdevelopment of Italian

<sup>&</sup>lt;sup>50</sup> Processing of European Central Bank data – Statistical Data Warehouse – Euro Area Accounts

<sup>&</sup>lt;sup>51</sup> GDP and stock market capitalization as of December 2015. Source: ECB and Borsa Italiana. [http://www.borsaitaliana.it/borsaitaliana/statistiche/statistiche-

storiche/capitalizzazioni/2015/201512/capitalizzazionedelleazioniquotate\_pdf.htm]
<sup>52</sup> Source: World Bank Data

<sup>[</sup>http://data.worldbank.org/indicator/CM.MKT.LCAP.GD.ZS?end=2015&start=1975]

capital and corporate bond markets. Indeed, the Italian economy is still dominated by family-owned firms and SMEs, and less than 350 companies are currently quoted on the stock exchange, against the 616 in Germany and over 700 in France<sup>53</sup>.

Moreover, such fundamental role of the bank funding can be explained by looking at the banks' balance sheet composition. On the asset side, indeed, we can see that the higher proportion of bank lending is to non-financial corporations (approximately 50% of GDP), while loans to households have a lower weight (38%) compared to a Euro Area average of 51%. This result is partly due to Italian households' cultural habits, which have always been characterized by a higher propensity to save and a general reliance on intergenerational transfers of both money and home ownership (De Bonis, *et al.*, 2011).

		2014	2015
Country	2013	2014	2015
Loans to Households/GDP			
Euro Area	0.53	0.52	0.51
Italy	0.38	0.37	0.38
Germany	0.52	0.51	0.50
France	0.53	0.51	0.52
Spain	0.75	0.72	0.66
Loans to Non-financial corporations/GDP			
Euro Area	0.44	0.43	0.41
Italy	0.51	0.51	0.49
Germany	0.32	0.30	0.30
France	0.41	0.42	0.42
Spain	0.61	0.54	0.49

Source: Processing of European Central Bank data – Statistical Data Warehouse – Money, credit and banking (stocks as a percentage of GDP for the year)

With regard to the structure, the Italian banking sector still shows a high level of fragmentation, despite the consolidation waves and all the operational and organizational changes that followed the "Amato" Law<sup>54</sup>, at the turn of the 1990s. In particular, it comprises 641 banks, of which 167 established in the form of joint stock companies (SpA), 31 cooperative banks (*banche popolari*), 359 mutual banks (*banche di credito cooperativo*) and 84 branches of foreign banks. In short, a still considerably high number if compared with that of the Spanish and French banking systems, respectively equal to 262 and 383 (Germany is the exception with over 1,900 banks at the end of December 2015)<sup>55</sup>.

<sup>&</sup>lt;sup>53</sup> Source: Borsa Italiana, Deutsche Börse and Euronext websites.

<sup>&</sup>lt;sup>54</sup> The Banking Law n.218 of July, 30<sup>th</sup> 1990 (also known as "Amato-Carli" Law) introduced a new legal framework for the Italian banking industry, which was described at that time as "a petrified forest" due to the large number of banks and the severity of the 1936 Banking Law. The most important changes were the privatization process and the banks operating expansion, with the liberalization of branching and the creation of the "banking group" model.

<sup>&</sup>lt;sup>55</sup> Source: Banco de España Statistical Bulletin July 2016, Deutsche Bundesbank office report 2015 and FBF Press Office (09/08/2016)

	N° of banks	% of total	N° of branches	% of total
Banks established as SpA	167	26.1%	19,616	65.2%
Cooperative Banks	31	4.8%	5,773	19.2%
Mutual Banks	359	56.0%	4,421	14.7%
Branches of Foreign Banks	84	13.1%	254	0.8%
Total	641	100.0%	30,064	100.0%

Table 3.4: Italian bank categories

Source: Bank of Italy – Statistical Bulletin II 2016 – Figures as at March 2016

Among the structural financial indicators provided by the ECB Statistical Data Warehouse, those that are worth noting to highlight the little market concentration are: the Herfindahl Index (HHI)<sup>56</sup>, the market share of the five largest banks, the number of branches every 100,000 residents, the number of branches per bank and the number of employees per branch. In particular, as shown in Table 3.5, the Herfindahl Index for Italian banks is equal to 435, whereas the greatest concentration is in Spain which has a HHI close to 900. Looking at the share of assets of the top five banks, it is possible to conclude that Italy still has a comparatively low asset concentration (approximately 40%), higher only than that of Germany (the five largest banks hold just one third of the total bank assets). Finally, data on branches and employees show that in Italy, despite the little market concentration, there is a relatively low density of the branch network, especially compared with that of Spain which can be attributed to the high dispersion of the population (De Bonis, *et al.*, 2011).

2	<b>.</b> .		<u> </u>	
Country	Italy	Germany	Spain	France
Herfindahl Index	435	273	896	589
Market share of 5 largest banks (%)	41.1	30.6	60.2	47.2
Branches per 100,000 residents	49.6	41.7	67.0	56.5
Branches per bank	46.7	17.4	118.7	98.1
Employees per branch	9.9	19.0	6.3	10.9

Table 3.5: Struc	tural Financial	Indicators
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Source: Processing of European Central Bank data – Statistical Data Warehouse – EU Structural Financial Indicators (end-2015)

A part from the small size and the relatively high fragmentation, which are eventually related to the specific features of the Italian banking sector (e.g. the saving propensity, the cooperative and mutual banks, etc.), the true problem with Italian banks is represented by the large stock of NPEs, which reached the historical peak of  $\in$  341<sup>57</sup> billion in December

<sup>&</sup>lt;sup>56</sup> The Herfindahl Index (HHI) is a commonly accepted measure of market concentration. It is computed as the sum of the squares of the market shares of the firms within the industry, thus ranging from 0 to 10,000. The higher the HHI, the higher the market's concentration and the lower the level of competition.

<sup>&</sup>lt;sup>57</sup> On an individual basis (it does not consider branches of foreign banks, for example). In the FSR of April 2016, the Bank of Italy reports a value of  $\notin$  360 billion, which is instead on a consolidated basis for banking groups and individual for the rest of the system.

2015, more than four times higher than the figure of 2008 (as shown below in Figure 3.1). The NPLs or bad loans, which represent the worst category, have increased the most ( $\notin$  200 billion in December 2015) and they currently account for nearly 60% of the total amount of non-performing exposures and 10% of the stock of outstanding customer loans<sup>58</sup>. In addition, the Gross NPEs and NPLs ratios have more than quadrupled over the period 2008-2015, to reach respectively 22.0% and 12.9%. However, in 2015 there has been, for both ratios, a slower pace of growth than the year before (1.0% in 2015 vs. 3.2% in 2014 for the Gross NPEs ratio and 1.1% in 2015 vs. 2.0% in 2014 for the Gross NPLs ratio).



Figure 3.1: Gross NPEs and NPLs trend

Source: Pascuzzi, F., et al. (2016), The Italian NPL market. PwC publications

Moreover, to better understand the deterioration of Italian banks' asset quality, it is important to look at the composition of the stock (Pascuzzi, F., *et al.*, 2016). More specifically, looking at 2015 gross NPLs, almost half of the total amount is represented by secured loans, backed by real estate collaterals. What is more, nearly 80% of banks' gross NPLs are towards the corporate sector<sup>59</sup>, while the remaining 20% is represented by loans to consumer households and other, for consumer credit and purchase of building (Figure 3.2). Such result confirms that this high and rising stock of NPLs is the legacy of a severe

<sup>&</sup>lt;sup>58</sup> In December 2015, they amounted to €2,004 billion (Source: Bank of Italy – Statistical Bulletin II 2016).

<sup>&</sup>lt;sup>59</sup> The Bank of Italy shows the breakdown of loans towards the corporate sector as the sum of two categories: non-financial corporations and producer households (up to 5 employees). Among non-financial corporations, services companies are the most affected by bad loans.

and protracted recession that hit many Italian firms in 2008, but even more it underlines the high level of companies' dependence, especially the SMEs<sup>60</sup>, on bank funding.



Figure 3.2: Gross NPLs breakdown

Source: Pascuzzi, F., et al. (2016), The Italian NPL market. PwC publications

Other two relevant issues for the Italian banking sector, as highlighted by Jassaud and Kang in their IMF Working Paper<sup>61</sup>, are the low cash provisioning and the slow pace of write-offs, which contribute to the NPLs accumulation and the depression of banks' profitability and valuations. With regard to the first point, the average NPEs coverage ratio for Italian banks has declined since the onset of the financial crisis, from 48% in 2007 to 45% in 2015, with a low of 37% in 2012. Despite the slight upward trend over the last three years (driven by the pressures of the ECB's Asset Quality Review exercise) and the fact the current ratio is in line with the average of the main European banks (BoI, *Financial Stability Report*, April 2016), such improvement differs between the five bank categories<sup>62</sup>, with large and minor banks having lower-than-average coverage ratios (respectively 43.4% and 40.8%). On the other hand, the slow pace of write-offs, which is partly related to a general tendency of Italian banks to manage NPLs internally and write them down instead of having them removed from the balance sheet, has essentially lead to a situation in which new bad loans are not offset by adequate outflows (Figure 3.3).

<sup>&</sup>lt;sup>60</sup> This high dependence of small and medium sized companies can also be explained by looking at the distribution of bad loans by amount, provided by the Bank of Italy in the Statistical Bulletin. In particular, it is possible to see that, in terms of number of borrowers, nearly 75% of NPLs are related to loans the amount of which is less than  $\notin$ 75,000.

<sup>&</sup>lt;sup>61</sup> Jassaud, N., Kang, K. (2015), A strategy for developing a Market for nonperforming loans in Italy. IMF Working Paper

<sup>&</sup>lt;sup>62</sup> The Bank of Italy divides banks into five size classes: "5 largest groups", which comprises banks belonging to the groups Unicredit, Intesa Sanpaolo, Banca Monte dei Paschi di Siena, UBI Banca and Banco Popolare, "large banks", which comprises banks with total assets greater than  $\in$ 21.5 billion, "small banks", which are those with total assets between  $\in$ 3.6 billion and  $\in$ 21.5 billion and "minor banks" which have total assets below  $\in$ 3.6 billion.

Indeed, there has been a gradually decline in the share of extinguished bad loans compared to the stock of gross NPLs, reaching a low in 2014 (as shown in Figure 3.4).



Figure 3.3: New vs. extinguished NPLs



Finally, it is important to stress how this asset quality deterioration and associated provisioning have depressed banks' valuations and earnings capacity. Indeed, even though the Italian banking system is profitable overall, there is a significant heterogeneity across banks (Jobst and Weber, 2016) and, especially the smaller ones, will likely continue to face profitability challenges, even under favorable monetary conditions, due to the decrease in net interest income and high operating  $cost^{63}$ .

Furthermore, despite the better-than-expected results of EBA Stress Test, released last July, Italian banks' relative performance, with respect to Eurozone peers, continued to be weak<sup>64</sup> (e.g. the Texas ratio is still high at 110%). Looking also at trading multiples, it results that Italian banks are trading at 0.47x 17E P/BV (Price to Book Value) vs. a Eurozone average of 0.67x, implying a 30% discount, and that their 17E RoTE (Return on Tangible Equity) equals 6.1%, which is 22% lower than the Eurozone average.

Source: Cerved (2016), L'evoluzione dei crediti deteriorati in Italia e l'impatto delle riforme Note: new bad loans are in green, while extinguished bad loans in blue (€bn on the y-axis)

<sup>&</sup>lt;sup>63</sup> The highest among the ten largest economies in Western Europe, according to a study of "CGIA Associazione Aritigiani Piccole Imprese Mestre". More specifically, in 2014, 1.8% of Italian banks' assets has been spent as operating expenses (Jobst and Weber, 2016).

<sup>&</sup>lt;sup>64</sup> Credit Suisse Equity Research (2 September 2016). *The cost of a potential NPLs deconsolidation*.

### 3.2 A MARKET FOR NPLs IN ITALY

The problem of high and rising NPLs in Italy has been of great concern for a long time: many academics and researchers have addressed this topic in their papers<sup>65</sup>, discussing the barriers to NPL resolution and potential strategies to support economic recovery. Concurrently, political authorities have tried to study and implement targeted actions to reduce the stock of NPLs and trigger new lending.

All of that notwithstanding, today still persists the problem of a poorly developed secondary market for NPLs that could sustain corporate and financial restructuring. Indeed, alongside the high stock of NPLs, sales transactions are still limited; only for small amounts in 2012-2014 ( $\in$ 17 billion of non-performing exposures, of which about  $\in$ 11 billion of bad loans), which however increased, in 2015, to approximately  $\in$ 19 billion (of which about  $\notin$ 9 billion of bad loans). This strong activity in the last year was in large part due to the fact that Italian banks (especially Unicredit, MPS and Banco Popolare) have started to prepare and implement deleveraging plans, having defined which assets to hold, restructure, or sell<sup>66</sup>. In the first quarter of 2016, 8 new transactions of about  $\notin$ 5 billion have been registered (PwC predicts at least  $\notin$ 30 billion GBV transactions for 2016).

Looking below at the breakdown of transaction volumes (Figure 3.5), we can see that the majority of them are represented by disposals of consumer and retail unsecured credits.



Figure 3.5: NPEs transactions in the Italian market (€ bn)

Source: Pascuzzi, F., et al. (2016), The Italian NPL market. PwC publications

<sup>&</sup>lt;sup>65</sup> See, for example, Jassaud, N., Kang, K. (2015), *A strategy for developing a Market for nonperforming loans in Italy*. IMF Working Paper; Garrido, J., et al., (2016). *Cleaning-up Bank Balance Sheets; Economic, Legal, and Supervisory Measures for Italy* (No. 16/135). International Monetary Fund; Jobst, A., Weber, A. (2016), *Profitability and Balance Sheet Repair of Italian Banks* (No. 16/175). International Monetary Fund <sup>66</sup> KPMG, *European Debt Sales Report: 2016 edition* (February 2016).

The main reason is that the unsecured retail loans prove to be the more easily transferable asset class, compared with other clusters, due to the limited capital loss generated on their disposal. However, more transactions involving secured portfolios (commercial and residential real estate loans) are expected to occur in 2016, thanks to the long awaited recovery in the Italian real estate market. Expectations remain instead low for SMEs and corporate loan transactions.

Considering then the market participants, the sell-side is represented by a large number of Italian and foreign-owned banks, which are under pressure from the ECB to clean up their balance sheet, whereas, the buy-side is still characterized by a low number of large scale international investors (Fortress, Cerberus, Apollo etc.) and specialized players with a strong partnership with local servicers (Credito Fondiario, Anacap, Banca IFIS etc.).

Certainly, looking at other countries such as Japan and the United States, where markets for NPLs are more liquid and have generally existed for longer, it is clear that the whole European market for distressed debts is still small and at an early stage, especially in terms of transactions volumes over the outstanding stock of NPLs. The market is mainly characterized by outright sales and JVs between banks, investors and servicers, and it primarily focuses on commercial real estate and consumer loans (Aiyar, S., et al., 2015). However, as well as in Italy, also in Europe 2015 has been a record year, with transactions amounting to  $\in 141$  billion<sup>67</sup>, more than 10 times higher than in 2010 (Figure 3.6).



Figure 3.6: NPEs transactions in Europe

**Source:** *Capitalising on the acceleration in bank restructuring*, PwC publications (2016)

Most of the activity has taken place in the United Kingdom and Ireland, respectively with approximately  $\notin$ 40 billion and  $\notin$ 25 billion of successfully sold loan portfolios. This result is mostly due to the large transactions undertaken by their respective systemic bad banks, the UK Asset Resolution Limited (UKAR) and the National Asset Management Agency

<sup>&</sup>lt;sup>67</sup> KPMG, European Debt Sales Report: 2016 edition (February 2016).

(NAMA)<sup>68</sup>. In addition, it is worth noting that both the UK and Ireland are already shifting their deleveraging strategies from larger commercial real estate to residential mortgage and SMEs NPLs.

Why, then, does Italy have lagged behind other EU countries and, only now, it is showing signs of picking up?

### 3.2.1 MAIN IMPEDIMENTS

Yet, in the past (1997-2005), it has existed an Italian market for NPLs, which was even considered by many one of the largest reference markets outside the United States and Japan<sup>69</sup>. More specifically, the rise of the market started with the enactment of the Italian securitization Law 130/1999, which allowed many Italian banks to dispose of their NPLs. The main reason for this was that the Law provided a specific fiscal incentive to lessen the transfer cost: banks were, indeed, allowed to recognize NPL-related losses over a period of five years after the securitization. Between 1999 and 2005, more than €30 billion of bad loans were securitized.

However, with the expiration of the tax and accounting-related benefits in May 2001 (Fabozzi and Choudhry, 2004) and the subsequent downfall of the securitization process after the global financial crisis, the Italian NPL market has significantly slowed down.

But what were the barriers that have prevented so far the renaissance of this market?

According to Jassaud and Kang (2015), the limited NPL market activity in Italy has to be attributed to both supply and demand factors. In particular, on the supply side, banks are less incentivized to dispose of their NPLs due to:

• *Low level of provisioning*: in such situation, selling NPLs would imply discounts on the loan book value, as well as it would mean recognizing losses which would immediately undermine the bank's capital buffer. When provisioning is too low, banks are also incentivized to hold on their NPL portfolios in order to preserve their coverage ratios;

<sup>&</sup>lt;sup>68</sup> UKAR was established in 2010 and is wholly owned by the HM Treasury UK, while Ireland's NAMA was established in 2009 by the Government of Ireland (KPMG, *European Debt Sales Report: 2016 edition*, February 2016).

<sup>&</sup>lt;sup>69</sup> Fabozzi, F. J., Choudhry, M. (2004), *The handbook of European structured financial products* (Vol. 131). John Wiley & Sons

- *Limited capital buffers*: the low level of NPLs sales can be explained by the inadequate level of capital (e.g. a Texas ratio above 100%) set aside by banks to absorb potential losses;
- *Heavy reliance on collateral coverage*: as stated in the Financial Stability Report of April 2016, half of Italian gross non-performing loans are secured by collateral (67% including personal guarantees). However, even though collaterals represent a protection against the possibility of losses, they can incentivize banks to internally manage their bad loans and collect the value only at the end of the foreclosure. In short, Italian banks have what Jassaud and Kang (2015) call "a zero-cost call option" to delay the loan value recovery;
- *Close bank-borrower relationship*: traditionally, Italian banks, especially the small cooperative banks (BCCs), have always granted loans based on close, long-standing relationships with borrowers. In this context, massive sales of non-performing loans could compromise the reputation of the bank. It is also important to highlight that a close bank-borrower relationship, while it can help banks to better overcome information asymmetry problems, on the other hand, it can result in relaxed lending standards and, thus in higher NPLs;
- Servicing costs: there may be an incentive for banks to internally manage NPLs due to high servicing costs or because of servicers do not necessarily provide allinclusive services (they may be specialized only in certain asset classes or geographical areas);
- Unfavorable tax regime for provisioning and write-offs: until 2013, Italian banks were not allowed to deduct write-offs in the absence of a court declaration of insolvency and only loan loss provisions up to 0.3% of total outstanding loans were directly deductible from IRES, the corporate income tax (while the rest over a period of 18 years). In 2013, the Law has been amended (but still remains more restrictive than EU standards) by reducing the deductibility period from 18 years to 5 years, removing the 0.3% threshold and extending its provisions to the regional tax on production (IRAP)<sup>70</sup>;
- *Favorable accounting rules for holding NPLs*: first, the lack of a specific rule about when to write-off uncollectible loans, under IAS 39, has led Italian banks to apply the derecognition rule (i.e. wait until all possibilities for the collection are

<sup>&</sup>lt;sup>70</sup> Natixis (2016), Will Italian banks manage to get rid of their bad debts? Cross-Expertise Research

exhausted and contractual rights on cash flows are given up, rather than follow a prudential timely write-off)<sup>71</sup>. Second, since IAS 39 allow interest on impaired loans (not in the case of bad loans) to be accrued, banks are encouraged to retain NPLs, given the subsequent positive impact on their income and provisioning ratio. And third, incentives to restructure NPLs are weakened directly by the backward-looking approach of IAS 39 to loan provisioning, which permits recognition of credit losses only when incurred, based on an "objective evidence" (Gaston, E., Song, M. I., 2014). This approach, which is expected to be replaced with an expected loss based model, when IFRS 9 will become effective in 2018, may result in insufficient provisions;

• *Priority claim of public creditors*: the privileged role of public creditors (for example tax authorities) within bankruptcy procedure may discourage banks from restructuring NPLs.

On the other hand, factors limiting demand for distressed debts are the following<sup>72</sup>:

- *Information asymmetry between originating banks and investors*: the slow disposal of NPLs in Italy is largely due to the lack of complete and well-organized banks' databases, public asset and real estate transaction registers. In the majority of cases, historical data are not accurate, still in a printed format and not readily obtainable; therefore, investors are not able to properly assess NPLs portfolios in a timely manner;
- Length and inefficiency of foreclosure and insolvency procedures: NPLs restructuring is also hampered by the slow and inefficient Italian judicial system. Legal uncertainties around the recovery times<sup>73</sup> of unpaid debts have frozen investors' demand so far, due to higher legal costs of debt restructuring and lower expected recovery rates;
- *Market conditions*: investors are still concerned about the medium-term prospects for Italian economy and, even more, about the stability of the country's banking system;

<sup>&</sup>lt;sup>71</sup> The derecognition rule was actually designed for events such as the sale or transfer of financial instruments or when the financial rights to cash flows from a financial instrument expire (Gaston, E., Song, M. I., 2014).

<sup>&</sup>lt;sup>72</sup> Jassaud, N., Kang, K. (2015), A strategy for developing a Market for nonperforming loans in Italy. IMF Working Paper; Quaestio Capital Management SGR (2016), Atlante Fund Presentation.

<sup>&</sup>lt;sup>73</sup> According to a market study conducted by Cerved Credit Management, the average duration of bad debts has been estimated in 7.3 years (as a weighted average of lengths and volume of insolvencies in the categories: "insolvency proceedings", "foreclosure on real estate" and "seizure of 20% of salary").

• *Limited investor base*: in Italy the audience of institutional investors (private equity funds, pension funds and insurance companies) is still limited, as well as the portion of capital invested.

### 3.2.2 POTENTIAL BENEFITS

Considering that today the problem of NPLs is a "systemic" problem that impacts the economy as a whole and prevents the necessary recovery, the presence of an active and liquid secondary market for distressed loans (and collaterals) would encourage banks to dispose of their NPL portfolios and it would release enough resources to support credit growth (Jassaud and Kang, 2015).

In addition, being a more-cost effective alternative to internal management and court restructurings, a market for NPLs would contribute to reducing the burden on banks, especially the smaller ones (because of a lack of expertise and economies of scale or scope), and increasing loan recovery values, with the help of outside financing and expertise (Aiyar, S., *et al.*, 2015). In this respect, Italian banks could both sell directly their NPLs on the market or leverage key skills and competencies of outside investors, through specifically-created special purpose vehicles<sup>74</sup>. It would also improve banks' risk management practices, as well as support the recovery of the corporate sector by providing additional non-bank sources of funding, in the short-term, and promoting a general reallocation of resources over time.

Finally, a market for NPLs could trigger a virtuous circle in which the restructuring process would reestablish confidence between borrowers and creditors, lead to higher banks' profitability and unlock new lending to firms and households.

### 3.3 THE PROBLEM: A WIDE BID-ASK SPREAD

The true problem with the inefficiency of the NPLs market in Italy, which is eventually the result of all the above-mentioned impediments, is the wide difference between the price at

<sup>&</sup>lt;sup>74</sup> An important example, in this sense, is represented by the agreement reached between Unicredit, Intesa Sanpaolo and KKR Credit in June 2015. In particular, the two Italian banks will transfer selected corporate loan portfolios into a vehicle managed by a fully privately funded platform launched by KKR Credit. The platform aims to provide long-term capital and operational expertise to support Italian banks in managing assets. [https://www.unicreditgroup.eu/en/press-media/press-releases/2015/intesa-sanpaolo--unicredit--kkr-credit-sottoscrivono-accordo-a-s.html]

which banks would be willing to sell their NPLs and the price at which investors are willing to buy; the so-called "bid-ask spread". Such difference is always a constant feature of transactions and it generally differs according to the underlying asset (for example, it can range from 2.5%-5% for corporate bonds amounting up to €200 million, to 10%-20% for non-liquid shares)<sup>75</sup>.

However, why does in Italy the average differential between NPLs' net book value (NBV) and the market price is so wide<sup>76</sup>, as to prevent the development of a secondary market? To be precise, as of today, the disagreement between supply and demand of NPLs is around 20%<sup>77</sup>. Indeed, on the supply side, the ideal sale price for a bank is the difference between the nominal value and the current level of loan loss provisions: according to the last Financial Stability Report, as of December 2015 the average coverage ratio for bad debts was 59%; therefore, today banks are willing to sell their NPLs at approximately 41% of the nominal amount. On the demand side, instead, investors (specialized operators, hedge funds, etc.) are mainly concerned about the portion of the nominal amount that can be recovered after the disposal. Generally, there are no indicative market prices, since the market is still underdeveloped and prices can vary substantially depending on the type, collateral and amount of the coverage<sup>78</sup>.





Source: Natixis (2016), Will Italian banks manage to get rid of their bad debts?

<sup>&</sup>lt;sup>75</sup> Quaestio Capital Management SGR (2016), Atlante Fund Presentation

<sup>&</sup>lt;sup>76</sup> To be precise, the wide bid-offer price gap mainly relates to secured NPLs, as banks and investors apply different valuation criteria. The high coverage of unsecured NPLs, instead, helps the closing of many deals. (Credit Suisse Equity Research, Italian Banks, 20/07/2016).

<sup>&</sup>lt;sup>77</sup> Natixis (2016), Will Italian banks manage to get rid of their bad debts? Cross-Expertise Research

<sup>&</sup>lt;sup>78</sup> Ciavoliello, L.G., *et al.* (2016), *What's the value of NPLs?* Notes on Financial Stability and Supervision No. 3

However, it is argued that the majority of investors are prepared to pay, on average, up to 20%, thus leading to the above price gap of 21-23% (Figure 3.7) and the subsequent mismatch between demand and supply.

Among the factors that determine this wide pricing gap (also referred to as a "haircut" on the net book value) there are, as previously seen, the quality of data and documentation available to investors, the tax rules for provisioning, the costs and efficiency of the servicing segment, the market conditions, the rate and time of collateral decay, and so on. Above all, however, it is possible to say that the pricing gap is a function of (i) the NPL discount rate (or the investor's required return) and (ii) the expected recovery time of the distressed assets' residual value. This gap can widely differ from country to country (and even within the same country) depending on the effectiveness of the legal and judicial systems, the efficiency of banks' internal procedures and the return expectations of distressed debt investors.



Figure 3.8: Average length of foreclosure procedures by country

Source: Garrido, J., et al., (2016), Cleaning-up Bank Balance Sheets; Economic, Legal, and Supervisory Measures for Italy (No. 16/135), IMF

Obviously, the longer the recovery time, the higher will be the return required by investors and, subsequently, the pricing gap, thus discouraging banks to dispose of their NPLs<sup>79</sup>. In this respect, it should not seem strange that Italy has such a wide pricing gap: just thinking about the duration of the foreclosure procedures (as shown above in Figure 3.8), evidence shows that Italy is the worst country in the Eurozone, with an average recovery time of 56 months (~5 years) against the 24 months in Greece and Portugal and the only 5 months in the Netherlands (Garrido, J., *et al.*, 2016).

<sup>&</sup>lt;sup>79</sup> The market price is heavily affected by the average duration of legal procedures; that's why similar transactions in other countries cannot be used as comparable when setting the price.

Moreover, recovery times of cash flows not only affect the valuation of NPLs (to such an extent that it is estimated an increase of 10 percentage points in the market price with a two-year reduction in recovery times<sup>80</sup>), but also their equilibrium value. In particular, it has been shown that two banking systems that differ only for the recovery time (e.g. 2 years and 5 years) but have the same loan growth rate (e.g. 5%) and the same rate of new NPLs (e.g. 2%), would have in equilibrium a ratio of bad loans over total loans respectively equal to 3.5% and 7.4% (Ciavoliello, L.G., *et al.*, 2016).

In addition to these cross-country variations, however, one of the main reasons explaining the substantial bid-ask spread lie in the different valuation criteria used by banks and investors in determining the NPL value and, especially, those pertaining to the discount rate to be applied to expected cash flows and the treatment of direct and indirect costs.

### 3.3.1 BANKS VS. INVESTORS' VALUATION PERSPECTIVE

Different criteria for different valuation perspectives: while the primary objective for banks is to purse low-risk work-out strategies in order to minimize losses, investors are willing to speculate as much as needed to increase returns.

On one hand, Italian banks, as well as most of the European banks, recognize their loans on the basis of the applicable international accounting principles (IAS-IFRS). In particular, as already explained in the previous chapter, IAS 39 requires banks to measure their loans at amortized cost using the effective interest method. Thus, the loan gross book value (GBV) is given by the sum of the future expected cash flows, over the life of the loan, discounted at the original effective interest rate. This rate currently ranges from 4% to 5%, which necessarily results in a higher selling price.

The same mechanism is applied in case of non-performing loans. More specifically, the bank should evaluate (i) the recoverable amount, which is also related to the collateral value, (ii) the recovery rate (i.es. one minus the Loss-Given-Default) and (iii) the recovery time (which is different from that contractually agreed). The NPL's net book value (NBV) is then computed by discounting the new lower expected cash flows, adjusting for the new higher recovery time (in order to account for the duration of the collateral sale procedures). The difference between NPL's GBV and NBV is represented by the loan loss provision to be recognized in the profit and loss account (P&L) for the period.

<sup>&</sup>lt;sup>80</sup> Based on the strict assumption of an IRR of 15-25% (Ciavoliello, L.G., et al., 2016)

Over time, the difference will be given by the sum of all recorded write-downs and writebacks (in the case in which the debtor becomes solvent again).

In addition, banks are required, consistently with the international accounting principles, to consider the direct costs of managing NPLs (such as the costs of collecting and selling the guarantee) directly in the computation of expected cash flows, whereas the indirect costs (such as personnel expenses and servicing fees) should be recognized in the P&L of the period in which they are incurred (Ciavoliello, L.G., *et al.*, 2016).

On the other hand, instead, distressed debt investors generally reach lower NPL valuations, due to:

- Different estimates of the loan's future expected cash flows, because of information asymmetries in the market which force them to apply haircuts to the expected recoverable amounts provided by banks;
- Even assuming that banks and investors' estimates of expected cash flows are the same, the latter apply a different discount rate since they require a higher return (as of today, the IRR ranges from 10% to 25%) on investment, which includes a risk premium, generally greater the higher the dispersion of potential recoveries around the average value. In particular, investors' IRR is much higher because (i) they generally have a lower financial leverage than banks, (ii) they tend to be more risk-averse and (iii) they have to account for fund managers' fees. Then, potential information asymmetries can also be factored in a higher discount rate<sup>81</sup>;
- Investors immediately deduct all costs of managing NPLs, both direct and indirect, from the net book value;
- Potential acquirers can also attribute zero enterprise value (EV) to corporate NPLs or apply haircuts in case of non-listed companies or audit reports not released by international accountants<sup>82</sup>.

Figure 3.9 shows the different valuation perspective of banks and investors and how they come up to a different NPV.

<sup>&</sup>lt;sup>81</sup> Credit Suisse Equity Research, Italian Banks (20/07/2016). [http://www.sipotra.it/wpcontent/uploads/2016/07/Credit-Swiss\_Italian-banks-Report\_20.07.16.pdf]

<sup>&</sup>lt;sup>82</sup> Sheehan, J.M., (2011), *Optimising Distressed Loan Books: Practical Solutions for Dealing with Nonperforming Loans*. Harriman House

In particular, starting from the EV that secure each loan, investors adjust for the expected recovery rate, deduct the collection costs and then discount back at a rate between 15% and  $25\%^{83}$ .



Figure 3.9: Banks vs. Investors' valuation perspective

Source: Sheehan, J.M., (2011), Optimising Distressed Loan Books: Practical Solutions for Dealing with Non-performing Loans. Harriman House

Jobst and Weber (2016) have proposed a calculation approach for this pricing gap between book values and market prices, which immediately reflects one of the main inherent causes for it, that is, the use of an incurred loss-based model by banks, on one hand, and of an expected loss-based model by investors, on the other hand. More specifically, it is computed (in percent of each unit of NPLs) as the difference between an implied coverage ratio and the actual coverage ratio. Considering a loan with a fully provisioned unsecured portion of 15% (of the principal value) and the remaining 85% secured by collateral, the implied coverage ratio is estimated as follows:

$$[0.15 + \left(1 - \frac{\left((0.85 * (1 - r_c) * e^{-rt} * (1 - L)\right) - M)}{0.85}\right)]$$

Where L represents the legal/servicing fees (in percent), M the management costs (in percent), r is the required rate of return by investors,  $r_c$  is the collateral rate of decay and t the expected recovery time of collateral.

<sup>&</sup>lt;sup>83</sup> Assuming high discount rates and low recovery rates, we can say that investors discount cash flows twice. That's why they come up to such a low NPL's valuation (Sheehan, J.M., 2011).

### 3.4 CRITICAL ISSUES IN REDUCING THE GAP

Once raised the issue of this wide bid-ask spread, it is important to stress that there are not so many viable solutions for a quick and efficient reduction.

In general, to reduce the gap one could envisage either a higher NPL coverage ratio or a higher NPL market price<sup>84</sup>. In the first case, however, a coverage uplift would force banks to recognize additional provisions and losses and, therefore, to recapitalize in order to both absorb the additional losses and to comply with the Basel requirements (i.e. cover potential capital shortfalls to the SREP<sup>85</sup>).

The second way, instead, could be achieved with a reduction either in the recovery time or in investors' return. However, only the former seems to be a more realistic solution, even if it requires the necessary involvement of public authorities in the shortening of the foreclosure times. This because investors are generally unwilling to reduce their IRR, especially in the context of a market characterized by many forced sellers and a low number of buyers. Therefore, it would be more likely that originating banks increase their discount rate, consistently with the equity funding of NPLs. Nonetheless, even in this case, additional impairments will be required.

Two ways that have been proposed to solve the problem were: (i) aligning the book value of NPLs to the market price and (ii) create a systemic bad bank that allows Italian banks to transfer NPLs at a government-subsidized price. However, it has been shown that both are almost impossible to implement<sup>86</sup>.

### 3.4.1 ALIGNING THE BOOK VALUE TO THE MARKET PRICE

Aligning the book value of non-performing loans to the current market prices (which is eventually the same as having a higher NPL coverage ratio), would mean to impair the net value of bad loans by 50-55% and, therefore, to recognize additional losses (net of tax deduction at 27.5%) of about €30-33 billion. Table 3.6 contains a sensitivity analysis of the impact on the aggregate sector's CET1 and the implied LGD on bad loans, with respect to the haircut applied on NPL's net value. Assuming this massive write-offs, Italian banks

<sup>&</sup>lt;sup>84</sup> Credit Suisse Equity Research, Italian Banks (20/07/2016). [<u>http://www.sipotra.it/wp-content/uploads/2016/07/Credit-Swiss Italian-banks-Report 20.07.16.pdf</u>]

<sup>&</sup>lt;sup>85</sup> Within the supervisory review and evaluation process (SREP), the European Banking Authority (EBA) assesses whether banks' capital resources are adequate and provides the capital requirement (CET1) that banks have to meet on a consolidated basis.

<sup>&</sup>lt;sup>86</sup> Natixis (2016), Will Italian banks manage to get rid of their bad debts? Cross-Expertise Research

would eventually have an aggregate CET1 ratio between 9.6-9.9%, much lower than the average 12.3% (11.5% for significant banks) at the end of 2015.

Haircut	Losses (net of tax deduction , €bn)	Aggregate CET1 (%)	Change in CET1 (bp)	Implied Loss Given Default (LGD) on the nominal value of sofferenze
5%	3	12.1	56	61%
10%	6	11.9	30	63%
15%	9	11.6	5	65%
20%	12	11.4	-20	67%
25%	15	11.1	-46	69%
30%	18	10.9	-71	71%
35%	21	10.6	-97	73%
40%	24	10.4	-122	75%
45%	27	10.1	-148	77%
50%	30	9.9	-173	79%
55%	33	9.6	-198	81%
60%	36	9.3	-224	83%
65%	39	9.1	-249	86%
70%	42	8.8	-275	88%
75%	45	8.6	-300	90%
80%	48	8.3	-326	92%
85%	51	8.1	-351	94%
90%	54	7.8	-376	96%
95%	57	7.6	-402	98%

Table 3.6: Impact of a haircut on NPL's net value

This solution does not seem to be realistic, for both financial stability and political reasons. Indeed, on one hand, banks would not be willing to book massive capital losses at one time, preferring instead a gradual recovery of their asset quality over time. Moreover, on the other side, the government would be reluctant to the idea of re-imposing additional losses to the Italian banking system, after the bail-in of about 12,000 subordinated bondholders during the resolution of four small banks (Banca Marche, Banca Etruria, Cassa Risparmio di Ferrara and CariChieti), in November 2015<sup>87</sup>. This event has had significant implications for the banking sector, among which, in particular, the increased concern about Italian banks' asset quality and the establishment of a dangerous benchmark for future transactions.

### 3.4.2 THE IMPOSSIBILITY OF AN ITALIAN BAD BANK

The second solution is even more unlikely, since it would not comply with the current EU State aid rules, updated in August 2013, which define the common conditions under which

Source: Natixis (2016), Will Italian banks manage to get rid of their bad debts?

<sup>&</sup>lt;sup>87</sup> The resolution of these four small banks (split into a new "good bank" and a "bad bank") represented the first bail-in in Italy and it has been characterized by a large mark-down imposed by the EU (non-performing loans were indeed written down by 80%, from the original value of  $\in$ 8.5 billion).

the EU Member States can support financial institutions during crisis, with funding guarantees, recapitalizations or asset relief. The main changes, aimed at improving the level playing field between similar banks and at reducing the market fragmentation, have concerned (i) the implementation of a sound restructuring plan, to return to long-term viability, before asking for recapitalizations and (ii) the forced contribution, in case of capital shortfalls, of bank owners, junior creditors and hybrid instruments holders, before the use of public funding<sup>88</sup>.

Consequently, as of today, it is not possible to create a systemic bad bank such as those set up in Ireland (NAMA) and in Spain (SAREB), respectively in 2009 and 2012. Indeed, those public asset management companies, even though mainly financed by the private sector, have had the possibility to issue NPL-backed securities with the government's guarantee, free of charge, and therefore, to trigger the development of a distressed debt market. Instead, a similar sale of NPLs at "above market price" would imply, today, the "burden-sharing principle", as stated before.

In order to be compliant with EU State aid rules, a possible structure for a public AMC should have the following characteristics (Aiyar, S., *et al.*, 2015):

- *Transfer at market price:* NPLs should be transferred at market prices or, in case of market illiquidity, at a price agreed with the EU Directorate-General for Competition;
- *Semiprivate ownership:* public involvement should be limited to a minority stake so that the bad bank's liabilities would be only contingent liabilities for the state;
- *Governance:* a clear mandate, to maximize assets' recovery value in a predetermined period of time, should be assigned in order to avoid moral hazard behaviors;
- *Voluntary participation by banks:* banks should still be allowed to internally work out their NPLs or use private bad banks;
- *Strengthening NPLs recovery value:* temporary powers, such as fast-track restructuring solutions, should be granted to overcome specific structural problems.

<sup>&</sup>lt;sup>88</sup> "State aid: Commission adapts crisis rules for banks" [<u>http://europa.eu/rapid/press-release\_IP-13-672\_it.htm</u>]. According to Art. 107(3b) of TFEU (Treaty on the Functioning of the European Union), it constitutes an exception the State aid "to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State".

# CHAPTER 4

# GOVERNMENT STRATEGIES AND POTENTIAL IMPACTS

### 4.1 A THREE-PRONGED STRATEGY

Since 2014, when the EBA released the AQR and stress test results and raised the need for further structural reforms, the Italian Government has started to address the problem of high NPLs, implementing a number of actions and reforms.

In particular, it has developed a three-pronged strategy consisting of (i) a package of structural reforms aimed at improving the fiscal and corporate insolvency regimes, (ii) a state guarantee scheme, also known as "GACS" (*Garanzia sulla Cartolarizzazione delle Sofferenze*), to facilitate the NPL securitization and (iii) the launch of "Atlante", a private fund whose purpose is to act as a buyer of last resort for those banks that face market difficulties.

These initiatives, put in place since the beginning of summer  $2015^{89}$ , seem to have already produced benefits in terms of increased market liquidity and greater investors' interest and commitment towards the Italian NPLs market, which still remains one of the largest potential markets for distressed debts with its stock of non-performing exposures of about  $\in$ 341 billion. As previously mentioned, indeed, volumes of transactions have more than doubled in 2015, compared to the previous year ( $\in$ 19 billion vs.  $\in$ 8 billion), and at least  $\in$ 30 billion are expected to be sold in 2016 (Pascuzzi, F., *et al.*, 2016). Moreover, investor base is growing, both with the strengthening of incumbents and the entrance of new

<sup>&</sup>lt;sup>89</sup> It is worth noting that, in parallel with this three-pronged strategy, the Italian Government has started the implementation of several legal and regulatory reforms aimed at facilitating the consolidation of the banking system. In particular, in March 2015 the Senate approved the reform of cooperative banks (*banche popolari*), which forced those with assets above  $\in$ 8 billion to become joint stock companies (or alternatively to reduce their assets below the threshold or liquidate). In February 2016, it has been approved the reform of mutual banks (*banche di credito cooperativo*) with a net equity below €200 million. It provides for the establishment of a parent company with a minimum equity of €1 billion, the majority of which should be held by the BCCs (which in turn can opt for the transformation into joint stock company) (Pascuzzi, F., *et al.*, 2016).

players (such as pension funds, social security and insurance companies which are looking for yield due to the current low-interest rate environment), and more structured deals are started to replace single asset transactions.

In short, it is clear and widely accepted that government reforms are going in the right direction to encourage the banks' deleveraging and de-risking process and to help kick-start the Italian market for NPL sales and securitization. However, major concerns still remain about the extent to which this three-pronged strategy will be truly effective; something that could be judged only in the coming years.

### 4.1.1 STRUCTURAL MEASURES

The package of structural measures adopted by the Italian Government has involved both legal and fiscal aspects, with the specific purpose of stimulating, respectively, the demand and supply of NPLs, and ultimately reducing the price gap in the secondary market<sup>90</sup>. More specifically, on one hand, reforms tried to stimulate investors' demand by facilitating the recovery of bad loans and collateral, while, on the other hand, they tried to incentivize banks to write-off their NPLs, through a more favorable taxation of provisioning.

#### Foreclosure and Insolvency Law Reform

In June 2015, the Italian Government approved Law No. 132/2015 (then enacted by the Parliament in August), amending the Bankruptcy Law and the Civil Procedure Code in force, with the purpose of improving the available restructuring tools (i.e. out-of-court procedures and the so-called "*concordato preventivo*"<sup>91</sup>) and speeding up insolvency procedures. The major highlights of the reform can be summarized as follows<sup>92</sup>:

• *"Holdout problem" overcoming*: the Law has introduced a new mechanism to address the common delays caused by opportunistic behaviors of the minority of creditors, for those companies willing to conclude out-of-court restructurings and with a financial debt amounting to at least half of overall liabilities (however, they should be supported by 75% in value of the other creditors);

<sup>&</sup>lt;sup>90</sup> Natixis (2016), Will Italian banks manage to get rid of their bad debts? Cross-Expertise Research

<sup>&</sup>lt;sup>91</sup> It is a specific restructuring procedure, carried out under the court supervision, in which the debtor's restructuring plan should be approved by the majority of creditors and then confirmed by the court.

<sup>&</sup>lt;sup>92</sup> Marcucci, M., et al. (2015), *The changes of the Italian insolvency and foreclosure regulation adopted in 2015*. Notes on Financial Stability and Supervision No. 2

- Competing restructuring plans and bids: creditors of companies in "concordato preventivo" can submit a competitive plan with the one of the debtor (provided that they represent at least 10% of the financial debt and debtor's proposal does not ensure the reimbursement of at least 40% of unsecured debts), as well as alternative competing bids for assets subject to disposal are accepted from any interested party;
- New requirements for insolvency administrators: in order to promote higher transparency in the appointment of administrators and liquidators, it has been introduced an online database including all relevant data about these professionals and open to public inspection. In addition, administrators are now obliged to provide the liquidation plan within 180 days from the date of declaration and finish the process within two years (otherwise, they can be removed);
- *New best practices for the sale of collateral:* the reform tried to improve the efficiency in the foreclosure of collateral, by reducing the time-limits of certain procedures and the possibility to have multiple auctions, allowing the judge to call upon professional experts and successful tenderers to provide deferred payments. Then, it mandates the Ministry of Justice to establish a national online database containing information on all foreclosed assets' sales and insolvency fillings.

The above-mentioned provisions have then been supplemented by Law Decree No. 59/2016 (*"Decreto Sofferenze"*), which introduced additional urgent legal and regulatory measures, aimed at shortening the recovery times and aligning them to European standards. Among others, the most remarkable ones are<sup>93</sup>:

- "Pegno mobiliare non possessorio": in line with the "floating charge" existing in other jurisdictions, banks can now extend their pledge rights also on instrumental movable assets, such as machinery or inventories, in addition to real estate collateral. However, the businesses have now the possibility to transform, exploit and/or dispose of the assets encumbered by pledge (while previously the property was lost). This security interest must be entered in a specific online register held by the Italian tax authority;
- "*Patto Marciano*": a contract by which creditor and debtor agree so that, in case of default (i.e. when default is continuing for more than six month after the third

<sup>&</sup>lt;sup>93</sup> New Italian measures aimed at supporting businesses and accelerating credit recovery procedures - Law Decree 59/2016 dated 3 May 2016. [http://knowledge.freshfields.com/en/Global/r/1468/new italian measures\_aimed\_at\_supporting\_businesses\_and]

monthly instalment is due), the real estate collateral (with the exception of the entrepreneur's residential property) can be automatically repossessed by the bank or a designated real estate affiliate. In the case in which the appraisal value of the asset is greater than outstanding debt and costs, the creditor shall pay the difference to the debtor;

• *Compulsory expropriation:* the Decree introduced new rules on credit recovery procedures, among which the possibility to hold creditors' meetings and hearings using electronic tools, the provisional execution of an injunction order for the portion of the claim not challenged by the debtor and the provision that no oppositions are allowed if the disposal process has already started.

### Taxation of Provisioning Reform

The Law No. 132/2015 has also introduced important amendments to the taxation of banks provisioning, in order to facilitate the tax deductibility on loan losses and impairments. As already mentioned in the previous chapter, Italian taxation has always been more restrictive than European standards (until 2013, indeed, banks were only allowed to directly deduct less than 0.3% of the total debt from IRES, while the rest over 18 years<sup>94</sup>). However, with this reform, provisions for loans write-offs, write-downs and disposals may be deducted from IRES and IRAP in the year in which they incurred. To be precise, the Italian Government has introduced a transition period of ten years, starting from December 2014, according to which:

- Until 2025, banks will be allowed to deduct only the 75% of write-offs and write-downs' provisions and related losses, in the year they are recognized, while the remaining 25% and any losses not deducted as of December, 31<sup>st</sup> 2014 will be spread over the 10-year period, according to a specific percentage (i.e. 5% in 2016, 8% in 2017, 10% in 2018, 12% from 2019 to 2024 and 5% in 2025). Losses on disposals will always be 100% deductible in the year in which they incurred;
- From 2026 onwards, instead, all provisions and losses will be deductible in the year in which they are recognized.

Both reforms are expected to make a positive contribution to addressing the problem of NPLs in Italy. In particular, the reform of insolvency and foreclosure regulation is

<sup>94</sup> Natixis (2016), Will Italian banks manage to get rid of their bad debts? Cross-Expertise Research

expected to shorten the timelines of procedures and, consequently, to reduce investors' required return, in the short time, and the equilibrium value of banks NPL ratio, over the long term (Marcucci, *et al.*, 2015).

A preliminary assessment, conducted by the Bank of Italy, has indicated that the duration of a bankruptcy process should be halved in a favorable scenario (between -18% and -33% in a worst-case scenario) and the length of real estate auctions should drop by a quarter. Less optimistic is, instead, the report on NPL evolution by Cerved Credit Management<sup>95</sup>, according to which the average recovery time of bad debts will drop from 7.3 to 6 years in 2020 (with an estimated -28% length of bankruptcies and -20% length of judicial foreclosures). However, it also reports that, following the introduction of Law 132/2015, there has been an increase in the number of bankruptcies completed (Figure 4.1), which has passed from 6,383 over the period January-August 2015 (-4.7% YoY) to 7,234 from August 2015 to March 2016 (+13.3% YoY). The reduction in the average length of procedures (8 years in 2014 vs. 7.4 years in 2015) has actually started before its entry into force, since it has been registered a contraction of 7.8% YoY from January to August 2015 and of 7.9% YoY from August 2015 to March 2015 to March 2015 to March 2016.



Figure 4.1: Bankruptcies closed per month

Source: Cerved (2016), L'evoluzione dei crediti deteriorati in Italia e l'impatto delle riforme

All this notwithstanding, there are still many question marks that reduce, in the current perception of professionals, the actual "saving capacity" of the Government's plan. Amendments to the insolvency and foreclosure law are really enough to reduce debt recovery times? The real question is about the whole judicial system which is clogged up

<sup>&</sup>lt;sup>95</sup> Cerved (2016), L'evoluzione dei crediti deteriorati in Italia e l'impatto delle riforme

with cases and it is characterized by a lack of specialized judges and a high regional heterogeneity in the quality of court enforcement (e.g. the average length of bankruptcy procedures ranges from 5 years in Trentino-Alto Adige to 12 years in Sicily). Then, other major limits of the reform concern the fact that it does not change the insolvency regime for consumers and small enterprises and, especially, that it is not retroactive (not applicable to existing claims, but only to new inflows of bad loans).

### 4.1.2 THE GACS (GARANZIA CARTOLARIZZAZIONE SOFFERENZE)

The second part of the government strategy is represented by the so-called GACS (*Garanzia sulla Cartolarizzazione delle Sofferenze*), a fee-based guarantee scheme aimed at facilitating the securitization of NPLs and, therefore, at increasing liquidity in the secondary market. After the resolution of the four small banks in November 2015, the government has started debates with the European Commission in order to find alternative solutions to the creation of a systemic bad bank (given the restrictions imposed by the BRRD<sup>96</sup> and State Aid rules). In February 2016, they finally reached an agreement on this GACS mechanism, which has then been introduced in April by the Law No. 49/2016.



Figure 4.2: NPL securitization under the GACS scheme

Source: Natixis (2016), Will Italian banks manage to get rid of their bad debts?

<sup>&</sup>lt;sup>96</sup> The Bank Recovery and Resolution Directive (2014/59/EU) introduced a new framework for the recovery and resolution of credit institutions and investment firms. According to the new rules, public intervention is allowed only in circumstances of very extraordinary systemic stress and, in any case, after the bank's shareholders and creditors have borne losses equal to 8% of the bank's liabilities. [https://www.bancaditalia.it/media/approfondimenti/2015/gestione-crisibancarie/index.html?com.dotmarketing.htmlpage.language=1]

As shown in Figure 4.2, originating banks have now the possibility to clean up their balance sheets by transferring bad loans, for a price not higher than their net book value, to a private special purpose vehicle (SPV), which will in turn issue asset backed securities (in at least two tranches, senior and junior/equity, and one or more optional mezzanine), having NPLs as underlying assets.

The GACS scheme provides that only senior tranches (the least risky ones) shall be covered by the state guarantee and, more specifically, only the contractual interest and capital payment obligations of the senior noteholders. What is more, the government guarantee can be granted only after the senior notes have received a rating, equal to or higher than Investment Grade (BBB-, BBB, BBB+), from at least one rating agency, which will evaluate, among others, cash flows, collateral value, loans credit quality, amount invested in the junior tranches and the operating capacity of the appointed external servicer<sup>97</sup>. In addition to the rating for the senior notes, the adoption of the state guarantee, which however is not mandatory, requires that<sup>98</sup>:

- The originating bank has to sell at least 50% plus one of the junior notes and, anyhow, an amount of junior and mezzanine (if issued) notes such as to deconsolidate and de-recognize the securitized assets;
- The bank must appoint an external servicer responsible for the credit recovery. It should not be affiliated with the selling bank in order to avoid any potential conflicts of interest;
- The cash flows deriving from the collection activity, net of all costs, shall pay in priority interests on the senior notes, while the repayment of principal is subordinated to the payment of interests on the mezzanine (if issued). The junior/equity tranche shall be repaid only when all other tranches have been fully redeemed. It may also be provided a deferred repayment of mezzanine tranches under certain conditions or upon the achievement of certain performance targets;
- The bank has to pay a price at market level in the form of an annual commission proportional to the amount guaranteed, so that the issue of the state guarantee does not constitute State aid. In particular, the price of the guarantee is calculated based

<sup>&</sup>lt;sup>97</sup> Deloitte, Italian non-performing loans. State guarantee and securitization scheme...Unlocking the NPL log-jam? February 2016 [https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/corporate-finance/deloitte-uk-fa-italian-nonperforming-loans.pdf]

<sup>&</sup>lt;sup>98</sup> Natixis (2016), Will Italian banks manage to get rid of their bad debts? Cross-Expertise Research

on the average premium<sup>99</sup> of a basket of single name Italian issuers CDS (whose composition does not change over time and depends on the rating assigned to the senior notes), with the same rating and duration of the guaranteed securities;

• The price of the guarantee is increased in case the senior notes have not been fully reimbursed by the end of the third or the fifth year from the grant of the guarantee. This in order to incentive a quick recovery of the securitized debts.

Among other things, the GACS scheme is expected to incentivize banks to dispose of their NPLs and to prompt the development of a market for NPL securitization, through both the reduction in the funding costs of the SPV (by approximately 200bps, according to the MEF guidance) and the increase in investor's demand due to the higher credit worthiness of the senior tranches. However, major concerns regard (i) the pricing of the guarantee, unlikely to be accurate since the credit default swaps are generally hard to price, (ii) the amount of time necessary to put it in place (for this reason, it is more plausible that it will be used for large transactions), (iii) the type of credit enhancement that is needed to obtain the required rating for the senior notes, (iv) the tranching process and the composition of the underlying NPLs, given that the success of the scheme is determined by the placement of the junior tranche<sup>100</sup>, and (v) the transfer price of bad loans to the SPV, since in the case of very low prices, even though the risk of state aid would be limited, banks would be forced to recognize additional losses and face potential capital shortfalls. In short, the GACS is expected to have a positive impact, but only limited and clearly not sufficient to fill the gap between investors' market prices and book values (estimates of GACS contribution are between 1-3 percentage points only, against a pricing gap around 15-20%).

Nevertheless, a positive result has been registered by Banca Popolare di Bari, the first bank to take advantage of the GACS scheme in a  $\notin$ 480 million (GBV) bad loan securitization, comprising 63% secured loans and 37% unsecured loans to households and SMEs. The vehicle has issued three tranches: a senior, with investment grade BBB (High)/Baa1 by Moody's and DBRS of  $\notin$ 126.5 million (3 years maturity and coupon equal to 6-month Euribor plus 50bps), a mezzanine, with rating of B (High)/B2 by DBRS and Moody's of  $\notin$ 14 million (5-6 years maturity and coupon equal to 6-month Euribor plus 6%) and a

<sup>&</sup>lt;sup>99</sup> It is calculated over the six months preceding the issuance of the guarantee.

<sup>&</sup>lt;sup>100</sup> Indeed, it is worth noting that, if the junior tranche is not fully placed, it implies a capital absorption equal to 100% of its nominal value, thus weighing on the bank's solvency (the remaining portion of equity tranche is deducted from CET1). Therefore, banks might be unable or unwilling to dispose of their NPLs at fire-sale prices such as to gain sufficient demand for the junior tranche (Natixis, 2016).

junior, non-rated facility, amounting to  $\notin 10$  million (coupon not yet set but around 10-15%). This transaction has been, not only the first of this kind in the Italian market, but it has also reached a satisfactory level in terms of tranching and transfer price, which has been set equal to 31% of the loans' gross book value (~  $\notin 148$  million)<sup>101</sup>. A value that is definitely above the 20% obtained on average, by selling NPLs directly without securitization, and that is in line with the announced 33% for the upcoming disposal of Banca Monte dei Paschi's entire bad loan portfolio ( $\notin 27.7$  billion gross at a sale price of  $\notin 9.2$  billion). In short, the first use of the GACS has outperformed market expectations and set a positive benchmark for what will be the world's biggest NPL securitization.

However, the positive impact of the GACS mechanism is enhanced thanks also to the third part of the government's strategy, the launch of the Atlante fund.

### 4.1.3 THE ATLANTE FUND

The other important initiative, launched in April 2016, has been the Atlante fund, a closedend alternative investment fund participated by the main Italian banks (among which, Intesa Sanpaolo and UniCredit subscribed a  $\notin 1$  billion stake each), banking foundations, insurance companies, other institutional investors<sup>102</sup> and the publicly-owned Cassa Depositi e Prestiti (CDP), which contributed with  $\notin 500$  million. The fund has raised  $\notin 4.25$ billion (but with a potential leverage up to 110% of its capital) and has an investment timeframe of five years, which can be extended for another three years, each year.

Atlante has been promoted by Quaestio Capital Management SGR, which represents the fund's asset management company, and supported by the Italian Government as an alternative solution to the creation of a public bad bank. Indeed, the fund constitutes, using the words of the Italian Minister of Finance Mr. Padoan, "an entirely private operation", completely backed by private resources so as to comply with the EU State aid regulation<sup>103</sup>. According to Quaestio Capital Management's presentation<sup>104</sup>, the ultimate purpose of the fund is to "promote the creation and development of an efficient market of distressed assets in Italy", which is then translated into two primary functions:

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^{102} 67 investors overall, with no one holding more than a 20% stake.
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<sup>&</sup>lt;sup>101</sup> "Pop Bari sells bad loans with state guarantee, sets stage for MPS" [<u>http://www.reuters.com/article/eurozone-italy-banks-badloans-idUSL8N1AT29P</u>]

<sup>&</sup>lt;sup>103</sup> However, the ECB will carefully monitor the governance of the SGR and of the opinions of the Investors' Committee (made up of nine members and elected by the Investors' Meeting).

<sup>&</sup>lt;sup>104</sup> Quaestio Capital Management SGR (2016), *Atlante Fund Presentation* [http://www.quaestiocapital.com/sites/default/files/Quaestio\_Atlante\_Presentation\_29\_4\_2016EN.pdf]

- Invest up to 70% in Italian banks facing capital requirements' problems (i.e. a lower CET1 ratio than the SREP threshold), acting therefore as a back-stop facility for those future share capital increases that the market cannot secure by itself or that can entail a risk of bail-in and consequent systemic implications. This is what happened in the case of Banca Popolare di Vicenza and Veneto Banca, whose recapitalizations have been funded by Atlante with €1.5 billion and €1.0 billion, respectively;
- Invest at least 30% in Italian banks' non-performing loans, by acquiring the riskiest tranches (junior and/or mezzanine, if issued) of NPLs securitizations, or through *ad hoc* vehicles and tangible or intangible assets for NPLs transactions. This is aimed at stimulating competition and investors' demand (provided that senior tranches are covered by the GACS, which is essential to allow the multiplier effect in the equity tranches) and, therefore, at reducing the current wide bid-ask spread. Indeed, Atlante will require an IRR from the junior tranches lower than that traditionally demanded by specialized investors<sup>105</sup> (but, in any case, it should be adequate with the IRR of a bond having an average rating of single B), with the purpose of pushing up other players' bids.



**Figure 4.3: Market reaction to the launch of Atlante fund** Share prices (*Euro Stoxx Banks and FTSE Italy Banks*) and CDS spread (*basis points*)

Source: Bank of Italy, Financial Stability Report No. 1, April 2016

As we can see from Figure 4.3 above, the launch of Atlante has been positively welcomed by the markets: from the presentation of the project on April 11<sup>th</sup> to April 26<sup>th</sup>, Italian banks' share prices rose by 20% on average, while their CDS spreads drop by 50 basis points. This immediate re-rating of banks' share prices has proved that Atlante represents an important complement to the other government initiatives, implemented with the purpose of sustaining the weak Italian banking system. In particular, the ultimate

<sup>&</sup>lt;sup>105</sup> Atlante fund's objective is to generate a return of approximately 6% per annum, while investors' return is on average equal to 15%.

underlying mechanism, which the fund intends to exploit in order to support the market prices of shares and NPLs, is that of expectations. Indeed, if the market knows that there is someone willing to buy at a certain price, everyone (sellers and buyers) will expect that the price cannot go below that level and will act accordingly, so the price actually stabilizes at that level. In principle, "the buyer of last resort" would not even need to intervene spending its resources: something similar to what happened with the famous "whatever it takes" of the ECB President Mario Draghi.

But, for how long the fund will be able to condition market expectations? Indeed, while on one hand the Atlante fund has contributed to inject fresh capital, avoiding the bail-in and resolution of two troubled banks, on the other hand, many doubts still remain about its credibility and its effective role in solving the problem of NPLs in Italy. In this respect, the major market concerns regard: (i) the fund's limited size (equity resources)<sup>106</sup>, which has been drastically reduced after the recapitalizations of Banca Popolare di Vicenza and Veneto Banca, (ii) the presence of few specialized investors with high bargaining power, which potentially complicates the fund's task of boosting competition in the market, (iii) the lack of impartiality with respect to the market that it wants to stabilize, since the fund mostly consists of market participants and (iv) the potential risk of a domino effect in the long term, due to the increased exposure of stronger banks (those investing in the Atlante fund) to weaker institutions.

In short, Atlante seems to be only a "second-best choice", useful to address the most urgent problems surrounding the Italian banking system (last but not least, the upcoming mega-rescue plan of Banca Monte dei Paschi di Siena), but not conclusive. Moreover, Quaestio Capital Management's presentation itself states that the success of the project will heavily rely on the following external factors:

- The actual changes prompted by the insolvency and foreclosure law reforms, since a sound legal system is a necessary condition of any financial system;
- The ability of banks to return to high profitability levels, since the disposal of NPLs depends on their capacity to absorb old losses;

<sup>&</sup>lt;sup>106</sup> For this reason, on 8 August 2016 a second closed-end fund "Atlante II" has been set up with an initial size of ~£2 billion (the final target, to be achieved in a year, is £3.5 billion) and a specific focus on NPLs (or instruments linked to NPL deals, such as warrants). In particular, the Fund will buy the £1.6 billion mezzanine tranche of the securitized NPLs of Banca Monte dei Paschi di Siena. [http://www.quaestiocapital.com/sites/default/files/Comunicato%20Stampa%20Quaestio%20Atlante%20II% 2008.08.16%20ENG.pdf]

• The trends in the Italian economy and the real estate market over the next years, since the stock of bad loans also depends on the rate at which credit quality deteriorates, from performing to impaired, and from impaired to bad loans.

## 4.2 POTENTIAL CONSEQUENCES FOR THE LISTED BANKS

So far it has been presented the problem of the lack of a secondary market for NPLs in Italy, as well as the Italian government response through the above-mentioned threefold strategy. The aim of this paragraph is now to conduct a scenario analysis over the major Italian banks, in order to assess the possible implications of the measures so far adopted to stimulate demand and supply of NPLs, and more generally, the potential impacts of NPLs disposals on banks' net profit and capital.

The analysis is based on currently available disclosure of the banks, and therefore it cannot take into considerations many aspects that could mitigate the final result, such as the split of secured and unsecured NPLs, collateral values, portfolios composition (NPLs vintage, breakdown by geography and sector), concentration and provisioning policy.

In order to answer the question pointed out, the following steps have been performed:

- Identification of a significant sample of Italian listed banks;
- Data analysis through the consultation of their respective 2016 first half results presentations and consolidated financial statements (as of June, 30<sup>th</sup> 2016), their websites and broker reports;
- Identification of several pricing scenarios, in a worst, base and best case;
- Calculation of the potential profit and capital impacts on our universe of banks;
- Summary and discussion of results, on an individual and aggregate level.

### 4.2.1 PANEL SELECTION

With the aim of conducting our scenario analysis, the starting point has been the identification of a significant panel of Italian listed banks. To this end, the reference has been the division into size classes<sup>107</sup> used by the Bank of Italy in its Financial Stability

<sup>&</sup>lt;sup>107</sup> The division into size classes (5 largest groups, large, small and minor banks) is based on the composition of banking groups in December 2015 and total non-consolidated assets as of December 2008. The size classes 'large', 'small' and 'minor' refer to banks belonging to groups or independent banks with total assets, respectively, greater than  $\notin$ 21.5 billion, between  $\notin$ 3.6 billion and  $\notin$ 21.5 billion, and below  $\notin$ 3.6 billion (BoI, *Financial Stability Report*, April 2016).
Report. In particular, the sample includes the five largest groups, namely UniCredit (UCG), Intesa Sanpaolo (ISP), Banca Monte dei Paschi di Siena (BMPS), Unione di Banche Italiane (UBI) and Banco Popolare (BP), and six large banks, that is, Banca Carige (Carige), Banca Popolare dell'Emilia Romagna (BPER), Credito Emiliano (Credem), Banca Popolare di Milano (BPM), Credito Valtellinese (Creval) and Banca Popolare di Sondrio (BPSO). Among these, six banks are established in the form of joint stock companies (ISP, UCG, BMPS, UBI, Carige and Credem), while the other five are cooperative banks (BP, BPER, BPM, Creval, BPSO).

As of June,  $30^{\text{th}} 2016$ , the aggregated asset quality data show that these eleven banks group  $\notin 63.8$  billion NPLs NBV (~72.9% of the Italian banking system),  $\notin 65.9$  billion net Unlikely-To-Pay (UTP) and  $\notin 5.2$  billion net past dues for a total amount of net NPEs of  $\notin 134.9$  billion (~10.5% of total net customer loans). Moreover, with respect to the aggregated bad loans ratios, the coverage for NPEs is 46.7% (58.8% for NPLs, 28.1% for UTP and 20.8% for past dues), the net NPE and NPL ratios are respectively equal to 10.5% and 5.0% and, finally, the Texas ratio amounts to 107.0%.



Source: Processing of banks data (1H16)





**Source:** Processing of banks data (1H16)

To be precise, more than half of NPEs amount (~€69.0 billion, 51.2%) refers to the two major groups, Intesa Sanpaolo and UniCredit. However, while these two banks have a lower-than-average exposure (8.9% and 7.5%, respectively, vs. an average of 12.8%), thanks also to their greater size and risk diversification, all the other nine banks together account for 48.8% (~€65.9 billion) of the total amount of NPEs, while providing slightly more than half of total net loans of the first two groups (€435.2 billion vs. €849.4 billion).

The high average value is primarily due to five banks: obviously BMPS, which has a 21.9% share of NPEs ( $\notin$ 23.6 billion on total net loans of  $\notin$ 107.5 billion), then Banca Carige (19.0%), Creval (17.8%), Banco Popolare (17%) and BPER (14.5%). However, it should be noted that these banking groups have announced, also due to the pressures of ECB, the

disposal of significant amounts of gross NPLs, including in particular, the €27.7 billion portfolio of BMPS, the  $\in 8.0$  billion target of BPM-BP integration plan (Banco Popolare has also completed, last June, a €1 billion capital increase in order to provide the new group with an adequate capital base) and the  $\notin 1.8$  billion of Banca Carige, expected to be placed in two tranches of €900 million by the end of 2016 and in the second half of 2017. Then, considering the net NPLs, it is possible to note that there is a further increase in risk concentration. Indeed, about three quarters of total Italian bad loans weigh on the first eleven banks (i.e. €63.8 billion out of €87 billion), with the highest share of UniCredit (22.6%), followed by Intesa Sanpaolo (17.5%) and BMPS (12.2%).



Figure 4.6: Net NPEs and NPLs by banks

However, not all the banks in the sample are strong enough to bear the weight of impaired loans. Indeed, looking at the ratio between banks' net NPEs and their tangible equity (i.e. the Texas ratio), the most serious case is again BMPS with a ratio of 246.6%, followed by BP (197.6%) and Banca Carige (173.5%).



Source: Processing of banks data (1H16)

A virtuous example of credit quality is instead represented by Credem, which can boast the lowest Texas ratio (40.4%), as well as strong capital requirements (e.g. CET1 ratio phased in equal to 13.9% vs. the sample average of 12.5% and the 12.3% of the overall Italian banking system).

Source: Processing of banks data (1H16)

# 4.2.2 ASSUMPTIONS AND POTENTIAL SCENARIOS

Once it has been identified the sample of listed banks and analyzed their respective asset quality data, several pricing scenarios have been defined in order to evaluate the possible implications of NPLs disposals on each bank. Before this, however, a further exercise has been conducted in order to assess the cost of a potential coverage uplift, so as to compare the two different strategies.

In general, all the performed simulations are based on the following assumptions:

- The analysis is focused only on NPLs (*sofferenze*). In the first exercise, it has been considered only the impact of a potential increase in the NPL coverage ratio, as well as, in the second one, it has been assumed that loans in temporary financial distress are not affected by the reform (i.e. banks will dispose only of NPLs portfolios). Therefore, if any other actions are carried out also on the other non-performing categories (i.e. unlikely to pay and past dues), the final impact could be different;
- The analysis is based on static data as of 1H 2016, excluding any further increase or decrease in bad loans and potential actions on capital generation or consumption. Only with the purpose of assessing the impact on banks' net profit, 2016 expected earnings<sup>108</sup> have been used (rather than a trailing metric on the last 12 months);
- As already pointed out, the scenario analyses do not capture the different composition of NPLs portfolios, and especially the quantity and quality of real estate collateral;
- The tax relief has been calculate based on a rate equal to 31.4%, given by the sum of the corporate income tax (IRES) of 27.5% (it was not taken into account the IRES reduction to 24% with effect from 2017) and the regional tax on production (IRAP) of 3.9%. In addition, it has been assumed a banks' tax base positive and greater than the gross value of losses on disposal, in absolute terms;
- To assess the potential implications of a NPLs deconsolidation for those banks using the AIRB approach, it has been assumed that the difference between expected losses and provisions (i.e. the *IRB Provision Shortfall*) was nil in 1H16;
- The reference for the potential impact of the recovery time reduction, the GACS and Atlante is represented by the estimates provided by Quaestio Capital

<sup>&</sup>lt;sup>108</sup> Source: FactSet estimates as of 30<sup>th</sup> September 2016.

Management SGR in the Atlante fund presentation. Then, it has been assumed a proportional increase in each upside.

## The cost of a coverage uplift

Given below are the results of the first exercise, consisting in the simulation of the cost of a potential increase in the coverage ratio for NPLs (e.g. as a consequence of an increase in the discount rate applied by banks), given three different target levels: 65%, 70% and 75%. Obviously, the higher the target coverage ratio, the higher the additional provisions required and the greater the impact on both banks' tangible book value, capital ratio and 2016 expected net profit. The most and the least sensitive banks in the sample are highlighted in red and green, respectively.

The simulation is on four main steps:

• Simulated level of additional provisions (net of tax effect) needed to reach the target NPL coverage ratio:

Net additional provisions (€m)													
Target NPL Coverage	ISP	BMPS	UCG	Carige	Credem	UBI	Creval	BPM	BPSO	BPER	BP		
75%	(3,784)	(2,577)	(4,716)	(359)	(90)	(1,403)	(397)	(481)	(180)	(838)	(2,413)		
70%	(2,461)	(1,642)	(2,957)	(234)	(58)	(1,155)	(308)	(364)	(112)	(584)	(2,059)		
65%	(1,138)	(707)	(1,198)	(108)	(25)	(908)	(219)	(247)	(45)	(330)	(1,704)		

• Simulated impact on group CET1 ratio *phased in* (based on 1H16 RWA):

Impact on CET1 (bps)											
Target NPL Coverage	ISP	BMPS	UCG	Carige	Credem	UBI	Creval	BPM	BPSO	BPER	BP
75%	(132)	(363)	(118)	(200)	(69)	(228)	(259)	(137)	(77)	(266)	(546)
70%	(86)	(231)	(74)	(130)	(44)	(187)	(201)	(104)	(48)	(186)	(466)
65%	(40)	(100)	(30)	(60)	(20)	(147)	(142)	(70)	(19)	(105)	(385)

• Simulated impact on group tangible book value:

Impact on Tangible Equ	Impact on Tangible Equity (%)													
Target NPL Coverage	ISP	BMPS	UCG	Carige Credem	UBI	Creval	BPM	BPSO	BPER	BP				
75%	-9.4%	-27.0%	-10.6%	-16.3% -4.4%	-19.6%	-20.0%	-10.9%	-7.1%	-18.7%	-35.3%				
70%	-6.1%	-17.2%	-6.7%	-10.6% -2.8%	-16.1%	-15.5%	-8.2%	-4.4%	-13.0%	-30.1%				
65%	-2.8%	-7.4%	-2.7%	-4.9% -1.2%	-12.7%	-11.0%	-5.6%	-1.8%	-7.4%	-24.9%				

• Simulated capital buffer/shortfall to the SREP and the "target" CET1 ratio (set equal to the average 12.5%):

Capital Shortfall/Excess	Capital Shortfall/Excess to SREP (€m)													
Target NPL Coverage	ISP	BMPS	UCG	Carige	Credem	UBI	Creval	BPM	BPSO	BPER	BP			
75%	5,308	(1,612)	(5,677)	(175)	816	(63)	329	477	171	813	(73)			
70%	6,626	(675)	(3,920)	(49)	849	189	418	593	239	1,065	281			
65%	7,945	965	(2,163)	76	880	436	509	713	307	1,320	639			

Capital Shortfall/Excess	Capital Shortfall/Excess to CET1 "target" (€m)													
Target NPL Coverage	ISP	BMPS	UCG	Carige	Credem	UBI	Creval	BPM	BPSO	BPER	BP			
75%	(3,293)	(2,854)	(12,664)	(400)	101	(2,068)	(315)	(752)	(589)	(211)	(1,377)			
70%	(1,974)	(1,917)	(10,907)	(274)	133	(1,815)	(226)	(636)	(522)	41	(1,023)			
65%	(655)	(277)	(9,150)	(148)	165	(1,568)	(135)	(517)	(454)	296	(665)			

The coverage uplift would lead to a lower 2016E net income and pro-forma CET1 ratio (which however remains above the SREP requirement for most of the banks in all three scenarios), but at the same time, to an improved asset quality, evidenced by lower net NPL and Texas ratios (given the lower amount of net NPEs):

PF Net income 2016e (€n	n)										
Target NPL Coverage	ISP	BMPS	UCG	Carige	Credem	UBI	Creval	BPM	BPSO	BPER	BP
75%	(438)	(2,651)	(2,569)	(702)	49	(2,084)	(465)	(278)	(105)	(707)	(3,174)
70%	885	(1,716)	(810)	(577)	81	(1,837)	(376)	(161)	(37)	(453)	(2,820)
65%	2,208	(781)	949	(451)	114	(1,589)	(286)	(44)	30	(200)	(2,465)
Net income 2016E	3,346	(74)	2,147	(343)	139	(682)	(68)	203	75	131	(761)
					L'						
PF CET1 (%)											
Target NPL Coverage	ISP	BMPS	UCG	Carige	Credem	UBI	Creval	BPM	BPSO	BPER	BP
75%	11.4%	8.5%	9.3%	10.3%	13.3%	9.1%	10.4%	10.4%	10.0%	11.8%	9.4%
70%	11.8%	9.8%	9.8%	11.0%	13.5%	9.6%	11.0%	10.7%	10.3%	12.6%	10.2%
65%	12.3%	12.1%	10.2%	11.7%	13.8%	10.0%	11.6%	11.0%	10.6%	13.4%	11.0%
SREP	9.5%	10.8%	10.8%	11.3%	7.0%	9.3%	8.3%	9.0%	9.3%	9.3%	9.6%
New NPL ratio (%)											
Target NPL Coverage	ISP	BMPS	UCG	Carige	Credem	UBI	Creval	BPM	BPSO	BPER	BP
75%	2.7%	6.3%	2.6%	4.6%	1.1%	2.1%	3.5%	2.5%	2.0%	4.2%	3.3%
70%	3.2%	7.6%	3.1%	5.5%	1.3%	2.6%	4.2%	3.0%	2.4%	5.0%	3.9%
65%	3.7%	8.9%	3.7%	6.4%	1.5%	3.0%	4.9%	3.5%	2.8%	5.9%	4.6%
New Texas ratio (%)											
Target NPL Coverage	ISP	BMPS	UCG	Carige	Credem	UBI	Creval	BPM	BPSO	BPER	BP
75%	66.4%	207.3%	67.1%	149.7%	33.9%	90.4%	137.1%	65.8%	83.3%	115.3%	146.2%
70%	71.2%	221.6%	72.9%	158.1%	36.2%	95.4%	143.6%	69.7%	87.2%	123.5%	153.7%
65%	75.9%	235.8%	78.6%	166.4%	38.5%	100.5%	150.2%	73.5%	91.1%	131.8%	161.3%

#### Potential NPLs deconsolidation

The second exercise involves the simulation of profit and capital impacts of possible NPLs disposals, by varying the transfer price (expressed as a percentage of NPLs GBV) and the percentage of gross NPLs to be sold (i.e. at 20%, 40%, 60%, 80% and 100% GBV). The analysis goes through five different scenarios, characterized by a selling price of 18%, 20.7%, 29.3%, 33% and 41.2%, respectively. The current coverage ratio is assumed to be unchanged. In general, a NPL deconsolidation potentially has two main effects<sup>109</sup>:

<sup>&</sup>lt;sup>109</sup> Montesi, G. (2016), *Fundamentals of bank financial statement analysis*. [http://www.disag.unisi.it/sites/st07/files/allegatiparagrafo/30-05-2016/parte\_i.pdf]

- As in the sale of any assets, according to the book value and the sale price, there could be a gain (loss) on disposal with a consequent increase (decrease) in net profit and CET1 capital;
- According to the Basel framework, the disposal of NPLs determines a reduction in RWA, for those banks using the standardized approach, or in the IRB Provision Shortfall for those using the AIRB approach (in this case, there is no reduction in RWA because NPLs do not generate RWA, as their PD is equal to 1)<sup>110</sup>. Within our universe of banks, Banca Carige, BPM, Creval and BPSO apply the standardized approach, while the other seven banks (ISP, UCG, BMPS, BP, UBI, BPER and Credem) implement the AIRB one.

The net gain (loss) on NPLs disposal can be expressed as follows:

Net Gain (Loss) on disposal = 
$$\alpha * Gross NPLs * (cr - c\overline{r}) * (1 - t)$$

Where  $\alpha$  is the percentage of Gross NPLs to be sold, *cr* is the actual NPL coverage ratio,  $\bar{cr}$  is the coverage ratio on disposal (the one's complement represents the transfer price, as a percentage of NPLs GBV) and *t* is the tax rate. In the context of the AIRB approach, the net gain (loss) on disposal should also be reduced by the portion of IRB Provision Shortfall related to the Gross NPLs to be sold (however, as previously stated, the difference between expected losses and provisions is assumed for simplicity equal to zero). Moreover, the potential effects, in terms of changes in CET1 ratio ( $\varepsilon$ ), of the disposal of a share  $\alpha$  of NPLs, may be estimated as follows:

$$\varepsilon = \frac{CET1 + Net \ Gain \ (Loss) \ on \ disposal}{RWA - \alpha * Gross \ NPLs * (1 - cr)} - \frac{CET1}{RWA}$$
(Standardized approach)  
$$\varepsilon = \frac{CET1 + Net \ Gain \ (Loss) \ on \ disposal}{RWA} - \frac{CET1}{RWA}$$
(AIRB approach)

#### Scenario 1: NPLs disposal at 18% of face value selling price

The worst case scenario would be represented today by a disposal of NPLs at 18% of the gross book value, which constitutes the "dangerous" benchmark established with the resolution of the four mutual banks Banca Marche, Banca Etruria, Cassa Risparmio di Ferrara and CariChieti in November 2015 (18% has been also the price offered by the Apollo fund for the acquisition of the entire NPLs portfolio of Banca Carige).

<sup>&</sup>lt;sup>110</sup> However, in the event of significant NPL amounts, there should be a component of RWA reduction as for banks under the Standardized approach (not considered for simplicity).

Given below are the profit and capital impacts for all the banks in the sample:

Banks using the AIRB approach

ISP								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	38,570	60.7%	38,570	(5,636)	12.7%	-1.97%	3,455	(5,145)
80%	38,570	60.7%	30,856	(4,509)	12.7%	-1.57%	4,583	(4,018)
60%	38,570	60.7%	23,142	(3,382)	12.7%	-1.18%	5,710	(2,891)
40%	38,570	60.7%	15,428	(2,255)	12.7%	-0.79%	6,837	(1,763)
20%	38,570	60.7%	7,714	(1,127)	12.7%	-0.39%	7,965	(636)
BMPS								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	27,262	61.2%	27,262	(3,886)	12.1%	-5.47%	(2,921)	(4,163)
80%	27,262	61.2%	21,809	(3,109)	12.1%	-4.38%	(2,144)	(3,386)
60%	27,262	61.2%	16,357	(2,332)	12.1%	-3.28%	(1,367)	(2,609)
40%	27,262	61.2%	10,905	(1,554)	12.1%	-2.19%	(589)	(1,832)
20%	27,262	61.2%	5,452	(777)	12.1%	-1.09%	188	(1,054)
UCG								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	51,285	61.6%	51,285	(7,179)	10.5%	-1.80%	(8,144)	(15,131)
80%	51,285	61.6%	41,028	(5,743)	10.5%	-1.44%	(6,708)	(13,696)
60%	51,285	61.6%	30,771	(4,307)	10.5%	-1.08%	(5,273)	(12,260)
40%	51,285	61.6%	20,514	(2,872)	10.5%	-0.72%	(3,837)	(10,824)
20%	51,285	61.6%	10,257	(1,436)	10.5%	-0.36%	(2,401)	(9,388)
	,		,				(, ,	
Credem								

~	Gross NPLs	on (9/)	Gross NPLs	Net loss on	CET1 ratio	CET1	Shortfall/excess	Shortfall/excess to
u	<b>(€</b> m)	Cr (70)	disposed (€m)	disposal (€m)	(%)	impact (%)	to SREP (€m)	CET1 "target" (€m)
100%	943	61.1%	943	(135)	14.0%	-1.04%	771	55
80%	943	61.1%	754	(108)	14.0%	-0.83%	798	82
60%	943	61.1%	566	(81)	14.0%	-0.62%	825	109
40%	943	61.1%	377	(54)	14.0%	-0.42%	852	136
20%	943	61.1%	189	(27)	14.0%	-0.21%	879	164

UBI									
_	α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
	100%	7,216	46.7%	7,216	(1,749)	11.4%	-2.84%	(407)	(2,411)
	80%	7,216	46.7%	5,772	(1,400)	11.4%	-2.27%	(57)	(2,061)
	60%	7,216	46.7%	4,329	(1,050)	11.4%	-1.70%	293	(1,711)
	40%	7,216	46.7%	2,886	(700)	11.4%	-1.13%	643	(1,361)
	20%	7,216	46.7%	1,443	(350)	11.4%	-0.57%	993	(1,011)

BPER								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	7,398	58.5%	7,398	(1,193)	14.5%	-3.79%	457	(566)
80%	7,398	58.5%	5,919	(955)	14.5%	-3.03%	696	(328)
60%	7,398	58.5%	4,439	(716)	14.5%	-2.27%	934	(89)
40%	7,398	58.5%	2,959	(477)	14.5%	-1.52%	1,173	150
20%	7,398	58.5%	1,480	(239)	14.5%	-0.76%	1,412	388

BP									
	α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
	100%	10,330	40.9%	10,330	(2,909)	14.8%	-6.58%	(568)	(1,872)
	80%	10,330	40.9%	8,264	(2,327)	14.8%	-5.26%	14	(1,290)
	60%	10,330	40.9%	6,198	(1,745)	14.8%	-3.95%	596	(709)
	40%	10,330	40.9%	4,132	(1,164)	14.8%	-2.63%	1,178	(127)
	20%	10,330	40.9%	2,066	(582)	14.8%	-1.32%	1,759	455

Banks using the Standardized approach

Carige								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	3,658	60.7%	3,658	(535)	12.3%	-2.17%	(205)	(430)
80%	3,658	60.7%	2,927	(428)	12.3%	-1.70%	(122)	(347)
60%	3,658	60.7%	2,195	(321)	12.3%	-1.26%	(42)	(266)
40%	3,658	60.7%	1,463	(214)	12.3%	-0.82%	36	(188)
20%	3,658	60.7%	732	(107)	12.3%	-0.41%	111	(113)

BPM								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100	<b>0%</b> 3,409	54.4%	3,409	(644)	11.7%	-1.38%	475	(755)
80	<b>0%</b> 3,409	54.4%	2,727	(516)	11.7%	-1.09%	575	(654)
60	<b>0%</b> 3,409	54.4%	2,045	(387)	11.7%	-0.81%	673	(556)
40	<b>0%</b> 3,409	54.4%	1,364	(258)	11.7%	-0.54%	770	(459)
20	<b>0%</b> 3,409	54.4%	682	(129)	11.7%	-0.27%	865	(364)

Creval								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	2,601	52.8%	2,601	(522)	13.0%	-2.56%	333	(311)
80%	2,601	52.8%	2,081	(418)	13.0%	-2.02%	417	(227)
60%	2,601	52.8%	1,561	(313)	13.0%	-1.49%	499	(145)
40%	2,601	52.8%	1,041	(209)	13.0%	-0.97%	577	(67)
20%	2,601	52.8%	520	(104)	13.0%	-0.48%	653	9

BPSO								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	1,968	61.7%	1,968	(274)	10.8%	-0.85%	152	(609)
80%	1,968	61.7%	1,575	(219)	10.8%	-0.68%	193	(568)
60%	1,968	61.7%	1,181	(165)	10.8%	-0.50%	233	(527)
40%	1,968	61.7%	787	(110)	10.8%	-0.33%	273	(487)
20%	1,968	61.7%	394	(55)	10.8%	-0.17%	312	(448)

## Scenario 2: NPLs disposal at 20.7% of face value selling price

The base case scenario assumes a disposal of NPLs at the current market price. Despite the few reported transactions, evidence suggests that the majority of investors are prepared to pay, on average, up to 20%. However, for the purposes of this simulation, it has been used a price of 20.7%, as reported in the Atlante fund presentation. In particular, the latter

assumes that the price of a direct sale of NPLs portfolios (65% secured and 35% unsecured), to a hypothetical investor with an IRR target of 15%, is equal to 20.7%.

ISP								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	38,570	60.7%	38,570	(4,922)	12.7%	-1.72%	4,170	(4,431)
80%	38,570	60.7%	30,856	(3,938)	12.7%	-1.37%	5,154	(3,446)
60%	38,570	60.7%	23,142	(2,953)	12.7%	-1.03%	6,139	(2,462)
40%	38,570	60.7%	15,428	(1,969)	12.7%	-0.69%	7,123	(1,478)
20%	38,570	60.7%	7,714	(984)	12.7%	-0.34%	8,107	(493)
BMPS								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	27,262	61.2%	27,262	(3,381)	12.1%	-4.76%	(2,416)	(3,658)
80%	27,262	61.2%	21,809	(2,705)	12.1%	-3.81%	(1,740)	(2,982)
60%	27,262	61.2%	16,357	(2,029)	12.1%	-2.86%	(1,064)	(2,306)
40%	27,262	61.2%	10,905	(1,352)	12.1%	-1.91%	(387)	(1,630)
20%	27,262	61.2%	5,452	(676)	12.1%	-0.95%	289	(953)
UCG								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	51,285	61.6%	51,285	(6,229)	10.5%	-1.56%	(7,194)	(14,181)
80%	51,285	61.6%	41,028	(4,983)	10.5%	-1.25%	(5,949)	(12,936)
60%	51,285	61.6%	30,771	(3,737)	10.5%	-0.94%	(4,703)	(11,690)
40%	51,285	61.6%	20,514	(2,492)	10.5%	-0.62%	(3,457)	(10,444)
20%	51,285	61.6%	10,257	(1,246)	10.5%	-0.31%	(2,211)	(9,198)
Credem								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	943	61.1%	943	(118)	14.0%	-0.91%	788	73
80%	943	61.1%	754	(94)	14.0%	-0.73%	812	96
60%	943	61.1%	566	(71)	14.0%	-0.54%	835	120
40%	943	61.1%	377	(47)	14.0%	-0.36%	859	143
20%	943	61.1%	189	(24)	14.0%	-0.18%	882	167

UBI									
	α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
	100%	7,216	46.7%	7,216	(1,616)	11.4%	-2.62%	(273)	(2,277)
	80%	7,216	46.7%	5,772	(1,293)	11.4%	-2.10%	50	(1,954)
	60%	7,216	46.7%	4,329	(969)	11.4%	-1.57%	373	(1,631)
	40%	7,216	46.7%	2,886	(646)	11.4%	-1.05%	696	(1,308)
	20%	7,216	46.7%	1,443	(323)	11.4%	-0.52%	1,019	(985)

BPER					1			
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	7,398	58.5%	7,398	(1,056)	14.5%	-3.35%	594	(429)
80%	7,398	58.5%	5,919	(845)	14.5%	-2.68%	805	(218)
60%	7,398	58.5%	4,439	(634)	14.5%	-2.01%	1,017	(7)
40%	7,398	58.5%	2,959	(422)	14.5%	-1.34%	1,228	204
20%	7,398	58.5%	1,480	(211)	14.5%	-0.67%	1,439	416

BP								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100	% 10,330	40.9%	10,330	(2,718)	14.8%	-6.15%	(377)	(1,681)
80	<b>%</b> 10,330	40.9%	8,264	(2,174)	14.8%	-4.92%	167	(1,137)
60	<b>%</b> 10,330	40.9%	6,198	(1,631)	14.8%	-3.69%	710	(594)
40	<b>%</b> 10,330	40.9%	4,132	(1,087)	14.8%	-2.46%	1,254	(50)
20	<b>%</b> 10 <b>,</b> 330	40.9%	2,066	(544)	14.8%	-1.23%	1,798	493

Carige								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	3,658	60.7%	3,658	(467)	12.3%	-1.76%	(132)	(356)
80%	3,658	60.7%	2,927	(374)	12.3%	-1.38%	(64)	(289)
60%	3,658	60.7%	2,195	(280)	12.3%	-1.02%	1	(223)
40%	3,658	60.7%	1,463	(187)	12.3%	-0.67%	64	(160)
20%	3,658	60.7%	732	(93)	12.3%	-0.33%	125	(99)

BPM								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	3,409	54.4%	3,409	(581)	11.7%	-1.19%	541	(689)
80%	3,409	54.4%	2,727	(465)	11.7%	-0.94%	627	(602)
60%	3,409	54.4%	2,045	(349)	11.7%	-0.70%	712	(517)
40%	3,409	54.4%	1,364	(233)	11.7%	-0.46%	796	(433)
20%	3,409	54.4%	682	(116)	11.7%	-0.23%	878	(351)

Creval											
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)			
100%	2,601	52.8%	2,601	(474)	13.0%	-2.22%	386	(258)			
80%	2,601	52.8%	2,081	(379)	13.0%	-1.75%	459	(185)			
60%	2,601	52.8%	1,561	(284)	13.0%	-1.29%	529	(115)			
40%	2,601	52.8%	1,041	(189)	13.0%	-0.84%	597	(47)			
20%	2,601	52.8%	520	(95)	13.0%	-0.42%	663	19			

BPSO								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	1,968	61.7%	1,968	(238)	10.8%	-0.69%	189	(571)
80%	1,968	61.7%	1,575	(190)	10.8%	-0.55%	223	(538)
60%	1,968	61.7%	1,181	(143)	10.8%	-0.41%	256	(505)
40%	1,968	61.7%	787	(95)	10.8%	-0.27%	288	(473)
20%	1,968	61.7%	394	(48)	10.8%	-0.13%	320	(441)

#### Scenario 3: NPLs disposal at 29.3% of face value selling price

In our third scenario we consider the potential positive effects of the three measures implemented by the Italian government, that is, the NPL securitization with the adoption of the GACS on the senior tranche, the Atlante fund intervention and the foreclosure and insolvency law reform. In particular, it has been adopted the waterfall chart of Quaestio Capital Management (Figure 4.8) which shows the incremental path of NPLs' transfer

price through all the potential upsides obtainable with the three-pronged government strategy, from the 20.7% of a straight sale to a final price of 29.3%.



Figure 4.8: Incremental path of NPLs' transfer price – Scenario 3

Source: Quaestio Capital Management SGR (2016), Atlante Fund Presentation

The main assumptions underlying the pricing construction are: (i) un-guaranteed securitization with 65% senior tranche and 35% junior tranche, 5% yield on senior notes and 15% IRR required on junior tranche, (ii) securitization with State guarantee on the senior tranche, (iii) sale of the junior tranche of an ABS GACS to the Atlante fund (with IRR equal to 6%) and (iv) recovery time reduction from 7 to 5 years.

ISP								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	38,570	60.7%	38,570	(2,647)	12.7%	-0.92%	6,445	(2,155)
80%	38,570	60.7%	30,856	(2,117)	12.7%	-0.74%	6,975	(1,626)
60%	38,570	60.7%	23,142	(1,588)	12.7%	-0.55%	7,504	(1,097)
40%	38,570	60.7%	15,428	(1,059)	12.7%	-0.37%	8,033	(567)
20%	38,570	60.7%	7,714	(529)	12.7%	-0.18%	8,563	(38)
BMPS								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	27,262	61.2%	27,262	(1,773)	12.1%	-2.50%	(808)	(2,050)
80%	27,262	61.2%	21,809	(1,418)	12.1%	-2.00%	(453)	(1,695)
60%	27,262	61.2%	16,357	(1,064)	12.1%	-1.50%	(99)	(1,341)
40%	27,262	61.2%	10,905	(709)	12.1%	-1.00%	256	(986)
20%	27,262	61.2%	5,452	(355)	12.1%	-0.50%	611	(632)
UCG								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	51,285	61.6%	51,285	(3,203)	10.5%	-0.80%	(4,169)	(11,156)
80%	51,285	61.6%	41,028	(2,563)	10.5%	-0.64%	(3,528)	(10,515)

Set out below are the results for the third scenario:

51,285

51,285

51,285

60%

40% 20% 61.6%

61.6%

61.6%

30,771

20,514

10,257

10.5%

10.5%

10.5%

-0.48%

-0.32%

-0.16%

(2,887)

(2,247)

(1,606)

(9,874)

(9,234)

(8,593)

(1,922)

(1, 281)

(641)

Credem								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	943	61.1%	943	(62)	14.0%	-0.48%	844	128
80%	943	61.1%	754	(50)	14.0%	-0.38%	856	141
60%	943	61.1%	566	(37)	14.0%	-0.29%	869	153
40%	943	61.1%	377	(25)	14.0%	-0.19%	881	166
20%	943	61.1%	189	(12)	14.0%	-0.10%	894	178

ORI									
	α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
	100%	7,216	46.7%	7,216	(1,190)	11.4%	-1.93%	152	(1,852)
	80%	7,216	46.7%	5,772	(952)	11.4%	-1.54%	390	(1,614)
	60%	7,216	46.7%	4,329	(714)	11.4%	-1.16%	628	(1,376)
	40%	7,216	46.7%	2,886	(476)	11.4%	-0.77%	867	(1,138)
	20%	7,216	46.7%	1,443	(238)	11.4%	-0.39%	1,105	(900)

BPER								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	7,398	58.5%	7,398	(620)	14.5%	-1.97%	1,031	7
80%	7,398	58.5%	5,919	(496)	14.5%	-1.57%	1,155	131
60%	7,398	58.5%	4,439	(372)	14.5%	-1.18%	1,278	255
40%	7,398	58.5%	2,959	(248)	14.5%	-0.79%	1,402	379
20%	7,398	58.5%	1,480	(124)	14.5%	-0.39%	1,526	503

BP									
	α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
	100%	10,330	40.9%	10,330	(2,108)	14.8%	-4.77%	233	(1,071)
	80%	10,330	40.9%	8,264	(1,687)	14.8%	-3.81%	655	(650)
	60%	10,330	40.9%	6,198	(1,265)	14.8%	-2.86%	1,076	(228)
	40%	10,330	40.9%	4,132	(843)	14.8%	-1.91%	1,498	194
	20%	10,330	40.9%	2,066	(422)	14.8%	-0.95%	1,919	615

Carige								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	3,658	60.7%	3,658	(251)	12.3%	-0.45%	103	(122)
80%	3,658	60.7%	2,927	(201)	12.3%	-0.36%	120	(104)
60%	3,658	60.7%	2,195	(151)	12.3%	-0.26%	137	(87)
40%	3,658	60.7%	1,463	(100)	12.3%	-0.17%	153	(71)
20%	3,658	60.7%	732	(50)	12.3%	-0.08%	169	(56)

BPM								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	3,409	54.4%	3,409	(380)	11.7%	-0.59%	751	(478)
80%	3,409	54.4%	2,727	(304)	11.7%	-0.47%	794	(435)
60%	3,409	54.4%	2,045	(228)	11.7%	-0.35%	836	(393)
40%	3,409	54.4%	1,364	(152)	11.7%	-0.23%	878	(352)
20%	3,409	54.4%	682	(76)	11.7%	-0.11%	918	(311)

α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	2,601	52.8%	2,601	(320)	13.0%	-1.13%	553	(91)
80%	2,601	52.8%	2,081	(256)	13.0%	-0.89%	590	(54)
60%	2,601	52.8%	1,561	(192)	13.0%	-0.66%	626	(18)
40%	2,601	52.8%	1,041	(128)	13.0%	-0.43%	661	16
20%	2,601	52.8%	520	(64)	13.0%	-0.21%	694	50

BPSO								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	1,968	61.7%	1,968	(122)	10.8%	-0.18%	309	(451)
80%	1,968	61.7%	1,575	(97)	10.8%	-0.14%	318	(443)
60%	1,968	61.7%	1,181	(73)	10.8%	-0.11%	327	(434)
40%	1,968	61.7%	787	(49)	10.8%	-0.07%	335	(426)
20%	1,968	61.7%	394	(24)	10.8%	-0.03%	343	(417)

#### Scenario 4: NPLs disposal at 33% of face value selling price

The fourth scenario assumes a NPLs de-recognition at a selling price equal to 33% of the GBV, which represents the price set for the deconsolidation of the entire bad loan portfolio of BMPS<sup>111</sup>. As already stressed, this upcoming transaction is expected to set a new positive benchmark for the Italian NPL market and to narrow the current price gap (indeed, the selling price is only 6% below the current nominal book value of 39%)

#### Figure 4.9: Incremental path of NPLs' transfer price – Scenario 4



ISP									
α		Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
	100%	38,570	60.7%	38,570	(1,668)	12.7%	-0.58%	7,424	(1,176)
	80%	38,570	60.7%	30,856	(1,334)	12.7%	-0.47%	7,758	(843)
	60%	38,570	60.7%	23,142	(1,001)	12.7%	-0.35%	8,091	(509)
	40%	38,570	60.7%	15,428	(667)	12.7%	-0.23%	8,425	(176)
	20%	38,570	60.7%	7,714	(334)	12.7%	-0.12%	8,758	158

<sup>&</sup>lt;sup>111</sup> However, the transaction provides also for a concurrent increase in the coverage ratios for NPLs (up to 67%) and for UTP and past dues (up to 40%). [<u>http://english.mps.it/media-and-news/press-releases/ComunicatiStampa Allegati/2016/Press\_Release\_ENG\_DEF.pdf</u>]

BMPS								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	27,262	61.2%	27,262	(1,081)	12.1%	-1.52%	(116)	(1,358)
80%	27,262	61.2%	21,809	(865)	12.1%	-1.22%	100	(1,142)
60%	27,262	61.2%	16,357	(649)	12.1%	-0.91%	317	(926)
40%	27,262	61.2%	10,905	(432)	12.1%	-0.61%	533	(709)
20%	27,262	61.2%	5,452	(216)	12.1%	-0.30%	749	(493)

UCG								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	51,285	61.6%	51,285	(1,902)	10.5%	-0.48%	(2,867)	(9,854)
80%	51,285	61.6%	41,028	(1,521)	10.5%	-0.38%	(2,487)	(9,474)
60%	51,285	61.6%	30,771	(1,141)	10.5%	-0.29%	(2,106)	(9,093)
40%	51,285	61.6%	20,514	(761)	10.5%	-0.19%	(1,726)	(8,713)
20%	51,285	61.6%	10,257	(380)	10.5%	-0.10%	(1,346)	(8,333)

Credem								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	943	61.1%	943	(38)	14.0%	-0.29%	868	152
80%	943	61.1%	754	(31)	14.0%	-0.24%	875	160
60%	943	61.1%	566	(23)	14.0%	-0.18%	883	168
40%	943	61.1%	377	(15)	14.0%	-0.12%	891	175
20%	943	61.1%	189	(8)	14.0%	-0.06%	898	183

UBI									
	α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
	100%	7,216	46.7%	7,216	(1,007)	11.4%	-1.63%	336	(1,669)
	80%	7,216	46.7%	5,772	(806)	11.4%	-1.31%	537	(1,467)
	60%	7,216	46.7%	4,329	(604)	11.4%	-0.98%	738	(1,266)
	40%	7,216	46.7%	2,886	(403)	11.4%	-0.65%	940	(1,064)
	20%	7,216	46.7%	1,443	(201)	11.4%	-0.33%	1,141	(863)

BPER								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	7,398	58.5%	7,398	(432)	14.5%	-1.37%	1,218	195
80%	7,398	58.5%	5,919	(346)	14.5%	-1.10%	1,305	281
60%	7,398	58.5%	4,439	(259)	14.5%	-0.82%	1,391	368
40%	7,398	58.5%	2,959	(173)	14.5%	-0.55%	1,478	454
20%	7,398	58.5%	1,480	(86)	14.5%	-0.27%	1,564	541

BP								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
10	<b>)%</b> 10,330	40.9%	10,330	(1,846)	14.8%	-4.18%	495	(809)
8	<b>0%</b> 10,330	40.9%	8,264	(1,477)	14.8%	-3.34%	864	(440)
6	<b>0%</b> 10,330	40.9%	6,198	(1,108)	14.8%	-2.51%	1,233	(71)
4	<b>0%</b> 10,330	40.9%	4,132	(738)	14.8%	-1.67%	1,603	298
2	<b>0%</b> 10,330	40.9%	2,066	(369)	14.8%	-0.84%	1,972	668

Carige								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	3,658	60.7%	3,658	(158)	12.3%	0.11%	204	(21)
80%	3,658	60.7%	2,927	(127)	12.3%	0.09%	200	(25)
60%	3,658	60.7%	2,195	(95)	12.3%	0.06%	196	(29)
40%	3,658	60.7%	1,463	(63)	12.3%	0.04%	192	(33)
20%	3,658	60.7%	732	(32)	12.3%	0.02%	188	(37)

BPM									
α		Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
	100%	3,409	54.4%	3,409	(294)	11.7%	-0.33%	842	(388)
	80%	3,409	54.4%	2,727	(235)	11.7%	-0.26%	866	(363)
	60%	3,409	54.4%	2,045	(176)	11.7%	-0.20%	890	(340)
	40%	3,409	54.4%	1,364	(117)	11.7%	-0.13%	913	(316)
	20%	3,409	54.4%	682	(59)	11.7%	-0.06%	936	(293)

Creval										
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)		
100%	2,601	52.8%	2,601	(254)	13.0%	-0.67%	624	(20)		
80%	2,601	52.8%	2,081	(203)	13.0%	-0.52%	646	2		
60%	2,601	52.8%	1,561	(153)	13.0%	-0.39%	667	23		
40%	2,601	52.8%	1,041	(102)	13.0%	-0.25%	688	44		
20%	2,601	52.8%	520	(51)	13.0%	-0.12%	708	63		

BPSO								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	1,968	61.7%	1,968	(72)	10.8%	0.04%	361	(399)
80%	1,968	61.7%	1,575	(57)	10.8%	0.03%	359	(401)
60%	1,968	61.7%	1,181	(43)	10.8%	0.02%	357	(403)
40%	1,968	61.7%	787	(29)	10.8%	0.02%	355	(405)
20%	1,968	61.7%	394	(14)	10.8%	0.01%	353	(407)

# Scenario 5: NPLs disposal at 41.2% of face value selling price

The last scenario represents the best case, in which it is assumed a deconsolidation of NPLs at a selling price in line with the average book value of 41.2% (given the aggregated coverage ratio for NPLs equal to 58.8%).



#### Figure 4.10: Incremental path of NPLs' transfer price – Scenario 5

As we can see, in this case most of the banks experience a gain rather than a loss on NPLs disposal, thanks to the narrower gap between the book value and the market price of bad loans.

α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net gain on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m
100%	38,570	60.7%	38,570	502	12.7%	0.18%	9,594	993
80%	38,570	60.7%	30,856	402	12.7%	0.14%	9,493	893
60%	38,570	60.7%	23,142	301	12.7%	0.11%	9,393	792
40%	38,570	60.7%	15,428	201	12.7%	0.07%	9,293	692
20%	38,570	60.7%	7,714	100	12.7%	0.04%	9,192	592

DMI 3								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net gain on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	27,262	61.2%	27,262	453	12.1%	0.64%	1,418	176
80%	27,262	61.2%	21,809	362	12.1%	0.51%	1,327	85
60%	27,262	61.2%	16,357	272	12.1%	0.38%	1,237	(6)
40%	27,262	61.2%	10,905	181	12.1%	0.26%	1,146	(96)
20%	27,262	61.2%	5,452	91	12.1%	0.13%	1,056	(187)

UCG								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net gain on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	51,285	61.6%	51,285	983	10.5%	0.25%	18	(6,969)
80%	51,285	61.6%	41,028	787	10.5%	0.20%	(179)	(7,166)
60%	51,285	61.6%	30,771	590	10.5%	0.15%	(375)	(7,363)
40%	51,285	61.6%	20,514	393	10.5%	0.10%	(572)	(7,559)
20%	51,285	61.6%	10,257	197	10.5%	0.05%	(769)	(7,756)

Credem										
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net gain on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)		
100%	943	61.1%	943	15	14.0%	0.11%	921	205		
80%	943	61.1%	754	12	14.0%	0.09%	918	202		
60%	943	61.1%	566	9	14.0%	0.07%	915	199		
40%	943	61.1%	377	6	14.0%	0.05%	912	196		
20%	943	61.1%	189	3	14.0%	0.02%	909	194		

UBI								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100	% 7,216	46.7%	7,216	(601)	11.4%	-0.97%	741	(1,263)
80	% 7,216	46.7%	5,772	(481)	11.4%	-0.78%	862	(1,142)
60	% 7,216	46.7%	4,329	(361)	11.4%	-0.58%	982	(1,022)
40	% 7,216	46.7%	2,886	(240)	11.4%	-0.39%	1,102	(902)
20	% 7,216	46.7%	1,443	(120)	11.4%	-0.19%	1,222	(782)

BPER								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	7,398	58.5%	7,398	(16)	14.5%	-0.05%	1,635	611
80%	7,398	58.5%	5,919	(13)	14.5%	-0.04%	1,638	614
60%	7,398	58.5%	4,439	(9)	14.5%	-0.03%	1,641	617
40%	7,398	58.5%	2,959	(6)	14.5%	-0.02%	1,644	621
20%	7,398	58.5%	1,480	(3)	14.5%	-0.01%	1,647	624

BP								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	10,330	40.9%	10,330	(1,265)	14.8%	-2.86%	1,076	(228)
80%	10,330	40.9%	8,264	(1,012)	14.8%	-2.29%	1,329	25
60%	10,330	40.9%	6,198	(759)	14.8%	-1.72%	1,582	278
40%	10,330	40.9%	4,132	(506)	14.8%	-1.14%	1,835	531
20%	10,330	40.9%	2,066	(253)	14.8%	-0.57%	2,088	784

DI

Carige								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net gain on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	3,658	60.7%	3,658	47	12.3%	1.36%	428	203
80%	3,658	60.7%	2,927	38	12.3%	1.07%	376	151
60%	3,658	60.7%	2,195	28	12.3%	0.79%	325	101
40%	3,658	60.7%	1,463	19	12.3%	0.52%	277	52
20%	3,658	60.7%	732	9	12.3%	0.25%	230	5

BPM								
α	Gross NPLs	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	3,409	54.4%	3,409	(102)	11.7%	0.24%	1,042	(187)
80%	3,409	54.4%	2,727	(82)	11.7%	0.19%	1,025	(204)
60%	3,409	54.4%	2,045	(61)	11.7%	0.14%	1,008	(221)
40%	3,409	54.4%	1,364	(41)	11.7%	0.09%	991	(238)
20%	3,409	54.4%	682	(20)	11.7%	0.05%	975	(255)

Creval								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	2,601	52.8%	2,601	(108)	13.0%	0.37%	784	139
80%	2,601	52.8%	2,081	(86)	13.0%	0.29%	771	127
60%	2,601	52.8%	1,561	(65)	13.0%	0.22%	760	116
40%	2,601	52.8%	1,041	(43)	13.0%	0.14%	748	104
20%	2,601	52.8%	520	(22)	13.0%	0.07%	737	93

BPSO								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net gain on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	1,968	61.7%	1,968	39	10.8%	0.53%	476	(285)
80%	1,968	61.7%	1,575	31	10.8%	0.42%	450	(311)
60%	1,968	61.7%	1,181	23	10.8%	0.31%	425	(336)
40%	1,968	61.7%	787	16	10.8%	0.21%	400	(361)
20%	1,968	61.7%	394	8	10.8%	0.10%	376	(385)

#### 4.2.3 DISCUSSION OF RESULTS

The exercises conducted show the profit and capital impacts of an NPLs coverage ratio uplift, on one hand, and of a NPLs deconsolidation, on the other hand. In both cases there is a negative impact, which is related, in the first exercise, to the higher required provisioning (as known, provisions are treated as an expense on banks' P&L), while in the other one, to the net loss generated on disposal, which clearly reduces net income and CET1 ratio (however, in the case of banks using the standardized approach there is a concurrent decrease in the denominator, due to the lower RWA). Obviously, the intensity of the impact can vary depending on the desired level of coverage ratio (i.e. the higher the target, the higher the required loan loss provisions and the greater the relative impact on the P&L and capital adequacy), as well as on the proportion  $\alpha$  of gross NPLs sold and/or the selling price. However, while there is a positive relation between  $\alpha$  and the loss on disposal (i.e. the higher the portion of gross NPLs disposed, the greater the profit and capital impacts), the latter is negatively related with the selling price, as a percentage of the gross NPLs to be sold. Indeed, as many times pointed out, the reason why Italian banks are not incentivized to dispose of their bad loans is represented by the very low prices offered by investors and, therefore, by the substantial pricing gap with respect to the book value. Based on our results, we can see that, from the first scenario characterized by a selling price of 18% to the last one in which NPLs are sold at 41.2% of the GBV, there is a progressive reduction in the loss on disposal which is even replaced, at the end, by a net gain for most of the banks (in particular, those having a NPLs net book value lower than the aggregated NBV of 41.2%), for all simulated  $\alpha$ .

Moreover, these exercises show that both an increase in the NPL coverage ratio and a NPLs deconsolidation can lead to potential capital buffers or shortfalls (even more substantial when NPLs securitization provides an equity tranche assigned to shareholders) with respect to the SREP requirement (used as a CET1 threshold) or a specific CET1 "target" (in our simulations has been set equal to the sample average of 12.5%, even though each bank will have its precise target level). As a consequence, many banks could be ultimately forced to raise additional money (both to cover potential losses and meet the capital requirement), for example through capital increases or the sale of non-core assets. Nevertheless, banks should accept the trade-off between profit and capital impacts and the balance sheet de-risking. Indeed, the immediate benefit of a potential bad loans clean-up

and deconsolidation is the improvement in bank's overall asset quality, clearly proved by a drop in net NPLs and Texas ratios.

As we can see from the tables below, the sample aggregated data point to a potential CET1 impact ranging between 66bps and 173bps, if the coverage uplift is applied, and between 118bps to 293bps in the event of a deconsolidation<sup>112</sup> at a selling price equal to 20.7% of the GBV ("base case scenario").

Aggregated data - Coverage uplift										
Target NPL Coverage		Net add. provisions (€m)	CET1 impact (bps)	Impact on Tangible Equity (%)	PF Net income 2016e (€m)	e PF CET1 (%)				
	75%	(17,238)	(173)	-13.7%	(13,124	) 10.8%				
	70%	(11,934)	(119)	-9.5%	(7,820	)) 11.3%				
	65%	(6,629)	(66)	-5.3%	(2,510	5) 11.9%				
		Aggregated data	- NPLs decons	solidation at 20.7% GB	V					
α	Gross NPI (€m)	Ls cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%) i	CET1 mpact (%)				
100%	154,640	58.8%	154,640	(21,747)	12.5%	-2.93%				
80%	154,640	58.8%	123,712	(17,398)	12.5%	-2.49%				
60%	154,640	58.8%	92,784	(13,048)	12.5%	-2.05%				

Despite the fact that in both cases there is a substantial impact on the P&L, we can conclude that banks would not have incentive to dispose of their NPLs (especially with percentages to be sold greater than 45%) under these conditions and they would rather opt for an increase in NPLs provisioning, in order to limit the capital impact.

61,856

30,928



Source: Processing of banks data (1H16)

40%

20%

154,640

154,640

58.8%

58.8%



12.5%

12.5%

(8,699)

(4,349)

-1.62%

-1.18%

Nevertheless, the NPLs deconsolidation is much more beneficial in terms of asset quality ratios improvement: looking above at the potential evolution of aggregated Texas ratio

<sup>&</sup>lt;sup>112</sup> CET1 impact is computed assuming the AIRB approach implementation.

(Figure 4.11), it is possible to see that it would fall from the current 107% to 99.4%, after a coverage uplift to 65%, and to 85.6% after a disposal of the 60% of gross NPLs%. The same result is confirmed considering the evolution of net NPLs ratio (Figure 4.12), which would drop by more than half, from the current 5% to 2.1% in case of NPLs deconsolidation. Considering instead a NPLs disposal at a selling price equal to 33% of the GBV, the reverse outcome is obtained, since there is a lower overall impact on profit and CET1 ratio, which could provide an incentive for banks to dispose of their NPLs, namely the ultimate purpose of the government strategy.

Aggregated data - NPLs deconsolidation at 33% GBV								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)		
100%	154,640	58.8%	154,640	(8,699)	12.5%	-1.62%		
80%	154,640	58.8%	123,712	(6,959)	12.5%	-1.45%		
60%	154,640	58.8%	92,784	(5,219)	12.5%	-1.27%		
40%	154,640	58.8%	61,856	(3,480)	12.5%	-1.10%		
20%	154,640	58.8%	30,928	(1,740)	12.5%	-0.92%		

Though, having a high NPLs coverage ratio means that the bank is well protected against future potential losses from its non-performing loans. But what is truly critical in this respect is to act in a timely and appropriate manner, thus anticipating credit losses that would be recognized during recessionary periods and, therefore, avoiding the need to massively write down loans in situations, like the current one, characterized by high stock of impaired loans. A timely provisioning, which is ultimately the aim of the new IFRS 9, should represent an early warning mechanism within the NPLs workout, so as to promote a more efficient bank lending. Probably a proper mix of the two activities (increase in the coverage ratio and deconsolidation) would be more beneficial, considering also that a higher coverage ratio helps to narrow the "bid-ask spread". In any case, banks should give themselves the necessary internal rules to decide which is the best strategy to follow.

Considering the individual banks in the sample, what is immediately evident, both in the case of a coverage uplift and a deconsolidation of NPLs, is the high heterogeneity of results. Obviously, the impact on the P&L is directly proportional to the initial stock of NPLs, so it follows that the most affected banks are UCG, ISP and BP, whereas the least ones are Credem and BPSO. However, while UCG and ISP would be able to cover additional loan loss provisions or a potential net loss on disposal, based on their expected 2016 net profit, BP would suffer a severe impact due to its estimated €761 million net loss for 2016. As far as the NPLs disposal is concerned, it worth noting that, even in the last

scenario ("best case") which assumes a selling price of 41.2%, a few banks continue to report considerable losses on disposal, that is, BP, UBI, Creval, BPM and BPER. The main reason is that they have a lower coverage than peers, exactly equal to an average 50.6% vs. 61.1% of the other six banks (UCG, ISP, BMPS, BPSO, Carige and Credem). However, as already underlined, both exercises do not consider real estate collateralization, thus penalizing banks with a low cash coverage ratio, such as UBI (46.7%).

Furthermore, while BP and BMPS are the most sensitive to capital impacts, with an average CET1 ratio loss (in the event of a coverage uplift) of 466bps and 231bps, respectively, Credem and BPSO are the least affected with just 44bps and 48bps, confirming themselves as the most virtuous examples of credit quality within the sample. The same evidence has been found throughout the several scenarios of a NPLs deconsolidation.

Moreover, both exercises show that banks are most likely to experience an overall excess capital to the SREP (since it is well below the current CET1 ratios), while facing an aggregated shortfall to the higher "target" CET1 ratio of 12.5%. Among all, BPER and Credem stand out with significant capital buffers both to their SREP requirements and the target CET1 ratio. In particular, in the event of an increase in NPLs coverage ratio, the former bank would have an average excess of capital amounting to €1.1bn and €42mln, with respect to the SREP and CET1 target, respectively; whereas the latter bank would have a buffer of €0.8bn and €0.1bn. Following a disposal of NPLs, instead, BPER would have an average capital excess to SREP and CET1 target of €1.3bn and €0.3bn, respectively, while Credem of €0.9bn and €0.2bn. Considering ISP, we can see that it would be the best in managing the coverage uplift, keeping a relevant buffer to the SREP of 231bps (or €6.6bn). Conversely, the level of capital would not be sound enough with respect to the higher capital requirement, as the bank would face an average €1.9bn shortfall. Finally, the most serious cases are UCG and BMPS, since they would be left with substantial capital shortfalls following both the bad loans clean-up and deconsolidation. In particular, UCG shows the greatest capital weakness with an average shortfall to SREP and CET1 target, after the coverage uplift, of €3.9bn and €10.9bn, respectively. The capital deficit would be slightly lower following the deconsolidation (€2.8bn and €9.8bn). Based on this scenario analysis, UCG should promptly focus on capital optimization actions, among which, for example, a rights issue and the spin-off of some assets (e.g. Fineco, Pioneer, Pekano and/or the whole Non-Core division which represents one of the main drags on profitability, as well as it comprises most of UCG's NPLs).

# Conclusion

This work have looked in detail at the uncertain state of health of the Italian banking system, which, further to be small and highly fragmented, is overburdened by nonperforming loans, a legacy of the past global financial crisis and of the country's prolonged recession. A problem which weighs heavily on Italian banks' balance sheets in a context already particularly difficult in economic and social terms, given the high unemployment, weak growth and low interest rates. A problem that, as we have seen, finds its roots in the lack of an active and liquid secondary market for NPLs that could instead sustain corporate and financial restructuring. In particular, different valuation criteria used by banks and investors, lengthy and judicial procedures and tax disincentives to provisioning and writeoffs have so far prevented Italian banks from disposing of their NPLs, as well as investors from demanding lower rates of return. A big problem that, however, is not an emergency for the whole Italian banking system and that can be managed in the medium term, quoting the words of the Bank of Italy Governor Ignazio Visco. Indeed, what we have noticed through the scenario analysis over the major Italian listed banks is that results are highly heterogeneous: not all banks are overburdened by NPLs, not all banks need recapitalizations. That is why the best solution to the problem cannot be to force banks to indiscriminately and rapidly offload their NPLs; rather it should be clearly framed on the individual banks' needs and challenges. For example, according to the results of our simulations, it seems that a NPLs deconsolidation is a right decision only for sufficiently high selling prices, due to the lower overall impact on profit and capital; otherwise, banks would be better off increasing NPLs provisioning. Nevertheless, even if the sale of NPLs to the market is not immediately required for all Italian banks and it is only one of the possible strategies to be adopted, it is clearly the fastest way to better purse the banks' deleveraging and de-risking. Indeed, in a context in which it is highly difficult to leverage on the intermediation margin or the reduction in operating costs, the only remaining driver of profitability is to focus on asset quality. What is more, the disposal of NPLs is not only a necessary tool for banks to return to focus on their core business of lending, but it can also represent an investment opportunity for many specialized operators, such as hedge funds and private equity funds, which could inject fresh capital into the economy. Thus, the Italian NPL market has a huge profitable potential that is just waiting to be unlocked.

Over the last year, there have been clear signs of picking up. Also under the pressures of the ECB, all banks have shifted their strategic priorities, devoting a large part of their business plans to the theme of NPLs disposals. At the same time, the Italian government has put in place the long awaited reform of the foreclosure and insolvency law and improved the tax regime for provisioning and write-offs. These measures have then been complemented by the GACS scheme and the launch of Atlante fund, two ways to facilitate the NPLs funding and securitization, while striving to meet the strict BRRD provisions and State Aid rules. However, Italian listed banks are still under pressure. Given the continuing speculation, it would seem that investors believe that a definitive solution to the problem of NPLs has not yet been found. Indeed, beyond the uncertainties related to the Brexit vote and the upcoming constitutional referendum, if we compare the market cap correction since the resolution of the four mutual banks, in November 2015, and the capital shortfall/buffer to the SREP in case of a full disposal of NPLs at 20.7% (Figure 4.13), the market seems to discount excessively the capital deficit in this adverse scenario.



Figure 4.13: Capital shortfall/buffer by bank vs. market cap correction

Source: Processing of banks data (1H16)

Only time will tell if the measures so far adopted are truly effective. Certainly, some specific recommendations should be followed by political authorities and banks. The former, among other things, should make the GACS scheme easier to implement, allow investors to access public databases, reduce the high regional heterogeneity in the quality of court enforcement and, in general, increase its overall credibility on the markets. At the same time, banks should enhance the transparency of their NPLs portfolios (especially of collateral and recovery times), write-down NPLs in case of obvious mismarked exposures (giving up the "wait and see" strategy) and customize the NPLs portfolios to be disposed (rather than selling heterogeneous packages). Moreover, certain banks (e.g. UCG and BMPS) should promptly put in place capital optimization actions (rights issue or non-core assets sale), while others (e.g. ISP and BPER) should exploit their capital buffer to the SREP in order to dispose of their NPLs and free up resources to support new lending.

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# DEPARTMENT OF BUSINESS AND MANAGEMENT

Master Thesis in Advanced Corporate Finance

# A secondary market for NPLs: The Italian government's response and potential consequences for the listed banks

Summary

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# Introduction

Nowadays non-performing loans (NPLs) are among the hottest financial topics and definitely one of the top priorities of European politicians and supervisory authorities. The global financial crisis and the subsequent recession have caused a sharp deterioration in banks' credit quality, which is then translated into a restriction in the supply of credit, subsequently affecting the growth prospects of viable firms. However, while in some countries the problem has been promptly managed, in Italy the stock of NPLs has more than quadrupled since 2008, to reach the historical peak of €341 billion in 2015. At the same time, sales transactions of NPLs have been of limited amount due to the lack of a secondary market. Only recently, the Italian government has adopted various structural measures to overcome what is the real underlying problem: the price gap between banks and investors, a disagreement amounting to around 20%. However, given the continuing speculation on Italian banks, it would seem that investors believe that a definitive solution to the problem of NPLs has not yet been found. In short, the purpose of this work is to analyze and discuss the problem of NPLs in Italy, the Italian Government's response and the possible impacts on profit and capital adequacy that the sale of NPLs would have on the major Italian listed banks.

# **Chapter 1: Overview of Non-Performing Loans**

The global financial crisis have revealed the recognized fragmentation of the banking systems, as well as the lack of a common scheme to classify loans. Accordingly, it follows that no standard definition for doubtful loans still exists. In general, NPLs are loans or advances whose credit quality has deteriorated, to various possible degrees, such that the full repayment of principal and/or interest, in accordance with the contractual terms, is not presently sure. Building on the need to harmonize NPLs reporting and assessment at an EU level, the EBA published in 2014 the harmonized definition of forbearance (FBE) and non-performing exposures (NPEs), which have then been transposed in Italy in 2015. The Bank of Italy currently envisages the use of five categories of credit quality: performing, past due, unlikely to pay, bad loans and forborne exposures (which is transversal to all credit risk classes).

A substantial amount of literature has investigated the causes of NPLs, capable of explaining their evolution over time. Empirical studies have generally proposed two main sets of determinants, namely macroeconomic and bank-specific factors. Below are summarized the determinants of NPLs, related studies and potential effects.

Determinants	Selected empirical studies	Correlation with NPLs
Macroeconomic		
Real GDP growth	ECB FSR (2011)	Negative
Exchange rate	Beck, et al. (2013)	Negative
Unemployment rate	Bofondi and Ropele (2011), Louzis, <i>et al.</i> (2012), Messai, Jouini (2013)	Positive
Real interest rate	Bofondi and Ropele (2011), Louzis, et al. (2012), Messai, Jouini (2013)	Positive
Inflation	Nkusu (2011)	Negative/Positive
Credit to private sector (% GDP)	Nkusu (2011)	Negative/Positive
Share prices	Nkusu (2011)	
Bank-specific	r	
Managerial inefficiency	Berger and DeYoung (1997)	Positive
Bank's capitalization	Keeton and Morris (1987), Salas and Saurina (2002) and Jimenez and Saurina (2006)	Negative
Bank's performance	Godlewski (2004), Louzis, et al. (2012)	Negative/Positive
Bank's size	Salas and Saurina (2002), Rajan and Dhal (2003)	Negative
Credit growth	Bercoff, <i>et al.</i> (2002), Louzis, <i>et al.</i> (2012)	Positive

In general, high levels of NPLs negatively affect all the areas of a bank's balance sheet, namely profitability, capital adequacy, asset quality, liquidity, and efficiency. The most direct impact is clearly the reduction in banks' profitability, which passes through the higher provisions that banks are required to charge to the P&L when a loan loss becomes likely. In addition, having high NPLs implies weaker capital buffers, higher funding costs, lower equity valuations and reduced lending volumes. Considering the fact that banks are the most important institutions of an economy, given their critical financial intermediation function, the severity of the feedback effects between the real and financial sectors is not surprising. They may work through credit and non-credit supply channels.

In recent decades, the sharp increase of NPLs has had a massive impact on banks' cost of risk, profits and capitalization, highlighting, at the same time, their difficulties and lack of preparation both in the internal enhancement and in the direct disposal of doubtful debts. In general, for a proper management and valorization of NPLs, an integrated approach shall be adopted, which provides for a bottom-up portfolio analysis and a top-bottom analysis of the functioning model, in order to identify the best strategies for each segment. Starting from the lowest degree of outsourcing, a bank may opt for one of the following strategies: (i) internal management, (ii) servicing transfers, (iii), joint ventures, (iv) direct sales and (v) the so-called "bad bank".

# **Chapter 2: Valuation of Non-Performing Loans**

Banks that adopt the IAS-IFRS principles are subject, among others, to the provisions of IAS 39, according to which bank loans shall be measured at amortized cost. This approach provides that the loan gross book value is equal to the discounted sum of future expected cash flows through the expected life of the financial instrument. The discount rate is the original effective interest rate. At the end of each reporting period, banks are required to assess if there is any objective evidence of loan uncollectibility. In that case, impairment losses shall be calculated (either individually or collectively), as the difference between the loan's carrying amount and the expected recoverable amount (i.e. the present value of estimated future cash flows resulting from restructuring or liquidation), and recognized in the profit and loss statement.

Alongside the accounting principles, banks are required to comply with regulatory and capital requirements set by the Basel framework. Even though both accounting and Basel frameworks recognize the issue of credit risk and require professional judgment in implementing standards, they primarily differ in terms of intentions of regulation (fair presentation of banks' financial position and performance vs. aligning banks' risk-taking behavior and capitalization) and methods applied to determine the amount of impairment losses (i.e. incurred vs. expected loss model).

The effects of the global financial crisis have triggered an intense revision process of accounting standards. In particular, in 2008 the IASB started developing a new accounting standard, called IFRS 9, which will replace IAS 39 in 2018. It is expected to better align regulatory and accounting requirements and, therefore, the level of provisions generated for financial reporting and prudential supervision purposes.

An alternative loan valuation method, discussed among academics, is the fair value approach, according to which the fair value of a loan is equal to the present value of all the cash flows a bank expects to receive, including potential prepayments and/or payment shortfalls, discounted at the investors' required return (adjusted for any credit and prepayment risk) on a loan with similar characteristics of that being valued.

# **Chapter 3: The Italian NPL market**

The Italian banking system is essentially small, highly fragmented and overburdened by bad loans, compared with other main European countries. The fact that the banking system is small is clearly related to the low development of the entire financial system than in other countries (Germany, France and Spain). On the other hand, however, the banking sector has always played a central role in the financing of firms, precisely because of this underdevelopment of Italian capital and corporate bond markets. Indeed, the Italian economy is still dominated by family-owned firms and SMEs, and less than 350 companies are currently quoted on the stock exchange. With regard to the structure, the Italian banking sector still shows a high level of fragmentation. In particular, it comprises 641 banks, of which 167 established in the form of joint stock companies, 31 cooperative banks, 359 mutual banks and 84 branches of foreign banks. A part from the small size and the relatively high fragmentation, the true problem with Italian banks is represented by the large stock of NPEs, which reached the historical peak of  $\epsilon$ 341bn in December 2015, more than four times higher than the figure of 2008. The NPLs, which represent the worst category, have increased the most ( $\epsilon$ 200bn in December 2015) and they currently account for nearly 60% of the total amount of NPEs and 10% of the stock of outstanding customer loans. Other two relevant issues for the Italian banking sector are the low cash provisioning and the slow pace of write-offs, which contribute to the NPLs accumulation and the depression of banks' profitability and valuations.

Even though academics and politicians have tried to study and implement targeted actions to reduce the stock of NPLs, today still persists the problem of a poorly developed secondary market for NPLs that could sustain corporate and financial restructuring. Indeed, alongside the high stock of NPLs, sales transactions are still limited; only for small amounts in 2012-2014 ( $\in$ 17bn of NPEs), which however increased, in 2015, to approximately  $\in$ 19bn. This limited NPL market activity has to be attributed to both supply (e.g. low level of provisioning, limited capital buffers, unfavorable tax regime for provisioning and write-offs, etc.) and demand (e.g. information asymmetry between originating banks and investors, length and inefficiency of foreclosure and insolvency procedures, etc. ) factors. The presence of an active and liquid market for distressed loans would instead encourage banks to dispose of their NPLs and it would release enough resources to support credit growth.

The true problem with the inefficiency of the NPLs market in Italy is the wide difference between the price at which banks would be willing to sell and the price at which investors are willing to buy; the so-called "bid-ask spread". As of today, this disagreement is around 20% (investors are prepared to pay up to 20%, while the current NBV of NPLs is around 41%). This pricing gap is a function of (i) NPL discount rate and (ii) expected recovery time of the distressed assets' residual value. It can widely differ from country to country depending on the effectiveness of the judicial system, the efficiency of banks' internal

procedures and the return expectations of distressed debt investors. Evidence shows that Italy is the worst country in the Eurozone, with an average recovery time of 56 months. In addition to these cross-country variations, however, one of the main reasons explaining the substantial spread lie in the different valuation criteria used by banks and investors in determining the NPL value and, especially, those pertaining to the discount rate to be applied to expected cash flows and the treatment of direct and indirect costs.

Two ways that have been proposed to solve the problem were: (i) aligning the book value of NPLs to the market price and (ii) create a systemic bad bank that allows Italian banks to transfer NPLs at a government-subsidized price. However, the first solution does not seem to be realistic, for both financial stability (massive capital losses to be booked at one time) and political reasons (government reluctant to re-impose additional losses to the banking system after the bail-in of the four mutual banks).

## **Chapter 4: Government Strategies and Potential Impacts**

Since 2014, when the EBA released the AQR and stress test results and raised the need for further structural reforms, the Italian Government has started to implement a number of actions aimed at narrowing the pricing gap and fostering the development of a market for NPL sales and securitization. In particular, it has developed a three-pronged strategy consisting of (i) a package of structural reforms aimed at improving the fiscal and corporate insolvency regimes, (ii) a state guarantee scheme, known as "GACS" (*Garanzia sulla Cartolarizzazione delle Sofferenze*), to facilitate the NPL securitization and (iii) the launch of "Atlante", a private fund whose purpose is to act as a buyer of last resort for those banks that face market difficulties. It is widely accepted that these reforms are going in the right direction to encourage the banks' deleveraging process; however, major concerns still remain about the extent to which this three-pronged strategy will be truly effective. For example, the foreclosure and insolvency law reform is not retroactive, the overall GACS scheme (the pricing of the guarantee, the type of credit enhancement needed for the rating of senior notes, etc.) is quite complex and the Atlante fund has a limited size and consists of market participants.

Once it has been presented the problem of a poorly developed secondary market for NPLs in Italy and the government response through the threefold strategy, it has been conducted a scenario analysis over the major Italian banks, in order to assess the potential impacts of NPLs disposals on banks' net profit and capital. In addition, it has been simulated the cost of a potential coverage uplift so as to compare the two different strategies.

The starting point has been the identification of a significant panel of listed Italian banks. To this end, the reference has been the division into size classes used by the Bank of Italy in its Financial Stability Report. In particular, the sample includes the five largest groups, namely UCG, ISP, BMPS, UBI and BP, and six large banks, that is, Carige, BPER, Credem, BPM, Creval and BPSO. As of June,  $30^{\text{th}}$  2016, the aggregated asset quality data show that these eleven banks group €63.8bn of net NPLs and €134.9bn of net NPEs. Moreover, the coverage for NPEs is 46.7% (58.8% for NPLs), the net NPE and NPL ratios are respectively equal to 10.5% and 5.0% and, finally, the Texas ratio amounts to 107.0%. To be precise, more than half of NPEs amount refers to the two major groups, ISP and UCG. However, while these two banks have a lower-than-average exposure (8.9% and 7.5%, respectively, vs. an average of 12.8%), thanks also to their greater size and risk diversification, all the other nine banks together account for 48.8% of the total amount of NPEs, while providing slightly more than half of total net loans of the first two groups. In general, all the performed simulations are based on the following assumptions:

- The analysis is focused only on NPLs (*sofferenze*). In the first exercise, it has been considered only the impact of a potential increase in the NPL coverage ratio, as well as, in the second one, it has been assumed that loans in temporary financial distress are not affected by the reform (i.e. banks will dispose only of NPLs portfolios);
- The analysis is based on static data as of 1H 2016 (with the exception of 2016 expected earnings);
- The scenario analyses do not capture the different composition of NPLs portfolios, and especially the quantity and quality of real estate collateral;
- The tax relief has been calculate based on a rate equal to 31.4%, given by the sum of IRES of 27.5% and IRAP of 3.9%. In addition, it has been assumed a banks' tax base positive and greater than the gross value of losses on disposal, in absolute terms;
- To assess the potential implications of a NPLs deconsolidation for those banks using the AIRB approach, it has been assumed that the difference between expected losses and provisions (i.e. the *IRB Provision Shortfall*) was nil in 1H16;
- The reference for the potential impact of the recovery time reduction, the GACS and Atlante is represented by the estimates provided by Quaestio Capital Management SGR in the Atlante fund presentation. Then, it has been assumed a proportional increase in each upside.
## The cost of a coverage uplift

Given below are the results of the first exercise, consisting in the simulation of the cost of a potential increase in the coverage ratio for NPLs (e.g. as a consequence of an increase in the discount rate applied by banks), given three different target levels: 65%, 70% and 75%. Obviously, the higher the target coverage ratio, the higher the additional provisions required and the greater the impact on both banks' tangible book value, capital ratio and 2016 expected net profit. The most and the least sensitive banks in the sample are highlighted in red and green, respectively.

• Simulated level of net additional provisions to meet the target NPL coverage ratio:

Net additional provisions (€m)												
Target NPL Coverage	ISP	BMPS	UCG	Carige	Credem	UBI	Creval	BPM	BPSO	BPER	BP	
75%	(3,784)	(2,577)	(4,716)	(359)	(90)	(1,403)	(397)	(481)	(180)	(838)	(2,413)	
70%	(2,461)	(1,642)	(2,957)	(234)	(58)	(1,155)	(308)	(364)	(112)	(584)	(2,059)	
65%	(1,138)	(707)	(1,198)	(108)	(25)	(908)	(219)	(247)	(45)	(330)	(1,704)	

• Simulated impact on group CET1 ratio *phased in* (based on 1H16 RWA):

Impact on CET1 (bps)												
Target NPL Coverage	ISP	BMPS	UCG	Carige	Credem	UBI	Creval	BPM	BPSO	BPER	BP	
75%	(132)	(363)	(118)	(200)	(69)	(228)	(259)	(137)	(77)	(266)	(546)	
70%	(86)	(231)	(74)	(130)	(44)	(187)	(201)	(104)	(48)	(186)	(466)	
65%	(40)	(100)	(30)	(60)	(20)	(147)	(142)	(70)	(19)	(105)	(385)	

## Potential NPLs deconsolidation

The second exercise involves the simulation of profit and capital impacts of possible NPLs disposals, by varying the transfer price (expressed as a percentage of NPLs GBV) and the percentage of gross NPLs to be sold (i.e. at 20%, 40%, 60%, 80% and 100% GBV). The analysis goes through five different scenarios, characterized by a selling price of 18%, 20.7%, 29.3%, 33% and 41.2%, respectively.

The net gain (loss) on NPLs disposal can be expressed as follows:

Net Gain (Loss) on disposal = 
$$\alpha * Gross NPLs * (cr - c\overline{r}) * (1 - t)$$

Where  $\alpha$  is the percentage of Gross NPLs to be sold, *cr* is the actual NPL coverage ratio,  $\overline{cr}$  is the coverage ratio on disposal (the one's complement represents the transfer price) and *t* is the tax rate. In the context of the AIRB approach, the net gain (loss) on disposal should also be reduced by the portion of IRB Provision Shortfall related to the Gross NPLs to be sold (however the difference between expected losses and provisions is assumed for simplicity equal to zero). Moreover, the potential effects, in terms of changes in CET1 ratio ( $\varepsilon$ ), of the disposal of a share  $\alpha$  of NPLs, may be estimated as follows:

$$\varepsilon = \frac{CET1 + Net \ Gain \ (Loss) \ on \ disposal}{RWA - \alpha * Gross \ NPLs * (1 - cr)} - \frac{CET1}{RWA} \qquad (Standardized \ approach)$$

$$\varepsilon = \frac{CET1 + Net \ Gain \ (Loss) \ on \ disposal}{RWA} - \frac{CET1}{RWA} \qquad (AIRB \ approach)$$

Below are reported for reference the results of the third scenario (*NPLs disposal at 29.3%* <u>of face value selling price</u>), which considers the potential positive effects of the three measures implemented by the Italian government, according to the waterfall chart used by Quaestio Capital Management SGR in the Atlante fund presentation.



Incremental path of NPLs' transfer price - Scenario 3

Source: Quaestio Capital Management SGR (2016), Atlante Fund Presentation

ISP								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	38,570	60.7%	38,570	(2,647)	12.7%	-0.92%	6,445	(2,155)
80%	38,570	60.7%	30,856	(2,117)	12.7%	-0.74%	6,975	(1,626)
60%	38,570	60.7%	23,142	(1,588)	12.7%	-0.55%	7,504	(1,097)
40%	38,570	60.7%	15,428	(1,059)	12.7%	-0.37%	8,033	(567)
20%	38,570	60.7%	7,714	(529)	12.7%	-0.18%	8,563	(38)
BMPS								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	27,262	61.2%	27,262	(1,773)	12.1%	-2.50%	(808)	(2,050)
80%	27,262	61.2%	21,809	(1,418)	12.1%	-2.00%	(453)	(1,695)
60%	27,262	61.2%	16,357	(1,064)	12.1%	-1.50%	(99)	(1,341)
40%	27,262	61.2%	10,905	(709)	12.1%	-1.00%	256	(986)
20%	27,262	61.2%	5,452	(355)	12.1%	-0.50%	611	(632)
UCG								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	51.285	61.6%	51.285	(3,203)	10.5%	-0.80%	(4,169)	(11,156)

## Banks using the AIRB approach

α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	51,285	61.6%	51,285	(3,203)	10.5%	-0.80%	(4,169)	(11,156)
80%	51,285	61.6%	41,028	(2,563)	10.5%	-0.64%	(3,528)	(10,515)
60%	51,285	61.6%	30,771	(1,922)	10.5%	-0.48%	(2,887)	(9,874)
40%	51,285	61.6%	20,514	(1,281)	10.5%	-0.32%	(2,247)	(9,234)
20%	51,285	61.6%	10,257	(641)	10.5%	-0.16%	(1,606)	(8,593)

Credem								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	943	61.1%	943	(62)	14.0%	-0.48%	844	128
80%	943	61.1%	754	(50)	14.0%	-0.38%	856	141
60%	943	61.1%	566	(37)	14.0%	-0.29%	869	153
40%	943	61.1%	377	(25)	14.0%	-0.19%	881	166
20%	943	61.1%	189	(12)	14.0%	-0.10%	894	178

UBI								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	7,216	46.7%	7,216	(1,190)	11.4%	-1.93%	152	(1,852)
80%	7,216	46.7%	5,772	(952)	11.4%	-1.54%	390	(1,614)
60%	<b>7,2</b> 16	46.7%	4,329	(714)	11.4%	-1.16%	628	(1,376)
40%	<b>7,2</b> 16	46.7%	2,886	(476)	11.4%	-0.77%	867	(1,138)
20%	7,216	46.7%	1,443	(238)	11.4%	-0.39%	1,105	(900)

BPER								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	7,398	58.5%	7,398	(620)	14.5%	-1.97%	1,031	7
80%	7,398	58.5%	5,919	(496)	14.5%	-1.57%	1,155	131
60%	7,398	58.5%	4,439	(372)	14.5%	-1.18%	1,278	255
40%	7,398	58.5%	2,959	(248)	14.5%	-0.79%	1,402	379
20%	7,398	58.5%	1,480	(124)	14.5%	-0.39%	1,526	503

BP								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	10,330	40.9%	10,330	(2,108)	14.8%	-4.77%	233	(1,071)
80%	10,330	40.9%	8,264	(1,687)	14.8%	-3.81%	655	(650)
60%	10,330	40.9%	6,198	(1,265)	14.8%	-2.86%	1,076	(228)
40%	10,330	40.9%	4,132	(843)	14.8%	-1.91%	1,498	194
20%	10,330	40.9%	2,066	(422)	14.8%	-0.95%	1,919	615

Banks using the Standardized approach

Carige								
α	Gross NPLs	cr (%)	Gross NPLs	Net loss on	CET1 ratio	CET1	Shortfall/excess	Shortfall/excess to
	(€m)		aisposea (€m)	disposal (Em)	(%)	impact (%)	to SREP (Em)	CEII "target" (€m)
100%	3,658	60.7%	3,658	(251)	12.3%	-0.45%	103	(122)
80%	3,658	60.7%	2,927	(201)	12.3%	-0.36%	120	(104)
60%	3,658	60.7%	2,195	(151)	12.3%	-0.26%	137	(87)
40%	3,658	60.7%	1,463	(100)	12.3%	-0.17%	153	(71)
20%	3,658	60.7%	732	(50)	12.3%	-0.08%	169	(56)

BPM								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	3,409	54.4%	3,409	(380)	11.7%	-0.59%	751	(478)
80%	3,409	54.4%	2,727	(304)	11.7%	-0.47%	794	(435)
60%	3,409	54.4%	2,045	(228)	11.7%	-0.35%	836	(393)
40%	3,409	54.4%	1,364	(152)	11.7%	-0.23%	878	(352)
20%	3,409	54.4%	682	(76)	11.7%	-0.11%	918	(311)

Creval								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	2,601	52.8%	2,601	(320)	13.0%	-1.13%	553	(91)
80%	2,601	52.8%	2,081	(256)	13.0%	-0.89%	590	(54)
60%	2,601	52.8%	1,561	(192)	13.0%	-0.66%	626	(18)
40%	2,601	52.8%	1,041	(128)	13.0%	-0.43%	661	16
20%	2,601	52.8%	520	(64)	13.0%	-0.21%	694	50
BPSO								
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)	Shortfall/excess to SREP (€m)	Shortfall/excess to CET1 "target" (€m)
100%	1,968	61.7%	1,968	(122)	10.8%	-0.18%	309	(451)
80%	1,968	61.7%	1,575	(97)	10.8%	-0.14%	318	(443)
60%	1,968	61.7%	1,181	(73)	10.8%	-0.11%	327	(434)
40%	1,968	61.7%	787	(49)	10.8%	-0.07%	335	(426)
20%	1,968	61.7%	394	(24)	10.8%	-0.03%	343	(417)

In both exercises there is a negative impact, which is related, in the first casw, to the higher required provisioning, while in the other one, to the net loss generated on disposal, which clearly reduces net income and CET1 ratio. Obviously, the intensity of the impact can vary depending on the desired level of coverage, as well as on the proportion  $\alpha$  of gross NPLs sold and/or the selling price. However, while there is a positive relation between  $\alpha$  and the loss on disposal, the latter is negatively related with the selling price. Indeed, the reason why Italian banks are not incentivized to dispose of their bad loans is represented by the low prices offered by investors and, therefore, by the substantial pricing gap with respect to the book value. Moreover, both an increase in NPL coverage ratio and a NPLs deconsolidation can lead to potential capital buffers or shortfalls with respect to the SREP or a specific CET1 "target" (set equal to the sample average of 12.5%). As a consequence, many banks could be ultimately forced to raise additional money, for example through capital increases or the sale of non-core assets. Nevertheless, banks should accept the trade-off between profit and capital impacts and the balance sheet de-risking. Indeed, the immediate benefit of a potential bad loans clean-up and deconsolidation is the improvement in bank's overall asset quality, clearly proved by a drop in net NPLs and Texas ratios. As we can see from the tables below, the sample aggregated data point to a potential CET1 impact between 66bps and 173bps, if the coverage uplift is applied, and between 118bps to 293bps in the event of a deconsolidation at 20.7% of the GBV ("base case scenario"). Despite the fact that in both cases there is a substantial impact on the P&L, we can conclude that banks would not have incentive to dispose of their NPLs (especially with percentages to be sold greater than 45%) under these conditions and they would rather opt for an increase in NPLs provisioning, in order to limit the capital impact.

Aggregated data - Coverage uplift											
Target NPL CoverageNet add. provisions (€m)CET1 impact (bps)Impact on Tangible Equity (%)PF Net income 2016e (€m)											
	75%	(17,238)	(173)	-13.7%	(13	,124) 10.8%					
	70%	(11,934)	(119)	-9.5%	<i>б</i> о (7,	,820) 11.3%					
	65%	(6,629)	(66)	-5.3%	(2	,516) 11.9%					
Aggregated data - NPLs deconsolidation at 20.7% GBV											
α	Gross NP (€m)	Ls cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)					
100%	154,640	58.8%	154,640	(21,747)	12.5%	-2.93%					
80%	154,640	58.8%	123,712	(17,398)	12.5%	-2.49%					
60%	154,640	58.8%	92,784	(13,048)	12.5%	-2.05%					
40%	154,640	58.8%	61,856	(8,699)	12.5%	-1.62%					
20%	154,640	58.8%	30,928	(4,349)	12.5%	-1.18%					

Considering instead a NPLs deconsolidation at 33% of the GBV, the reverse outcome is obtained, since there is a lower overall impact on profit and CET1 ratio which could provide an incentive for banks to dispose of their NPLs.

Aggregated data - NPLs deconsolidation at 33% GBV						
α	Gross NPLs (€m)	cr (%)	Gross NPLs disposed (€m)	Net loss on disposal (€m)	CET1 ratio (%)	CET1 impact (%)
100%	154,640	58.8%	154,640	(8,699)	12.5%	-1.62%
80%	154,640	58.8%	123,712	(6,959)	12.5%	-1.45%
60%	154,640	58.8%	92,784	(5,219)	12.5%	-1.27%
40%	154,640	58.8%	61,856	(3,480)	12.5%	-1.10%
20%	154,640	58.8%	30,928	(1,740)	12.5%	-0.92%

Though, having a high NPLs coverage ratio means that the bank is well protected against future potential losses from its NPLs. But what is critical in this respect is to act in a timely and appropriate manner, thus anticipating credit losses and avoiding the need to massively write down loans in situations characterized by high stock of impaired loans. Probably a proper mix of the two activities would be more beneficial, considering also that a higher coverage ratio helps to narrow the bid-ask spread. In any case, banks should give themselves the necessary internal rules to decide which is the best strategy to follow. On an individual level, what is immediately evident is the high heterogeneity of results. Obviously, the impact on the P&L is directly proportional to the initial stock of NPLs, so it follows that the most affected banks are UCG, ISP and BP, whereas the least ones are Credem and BPSO. However, while UCG and ISP would be able to cover additional provisions or a potential net loss on disposal, based on their expected 2016 net profit, BP would suffer a severe impact due to its estimated €761mln net loss for 2016. It worth noting that, even in the "best case", a few banks continue to report considerable losses on

disposal (BP, UBI, Creval, BPM and BPER). The main reason is that they have a lower coverage than peers, equal to an average 50.6% vs. 61.1%. Furthermore, while BP and BMPS are the most sensitive to capital impacts, Credem and BPSO are the least affected, confirming themselves as the most virtuous examples of credit quality within the sample. Moreover, both exercises show that banks are most likely to experience an overall excess capital to the SREP, while facing an aggregated shortfall to the higher "target" CET1 of 12.5%. Among all, BPER and Credem stand out with significant capital buffers both to their SREP and the target CET1. Considering ISP, we can see that it would be the best in managing the coverage uplift, keeping a relevant buffer to the SREP of 231bps. Conversely, the level of capital would not be sound enough with respect to the higher capital requirement, as the bank would face an average  $\notin$ 1.9bn shortfall. Finally, the most serious cases are UCG and BMPS, since in both cases they would be left with substantial capital shortfalls. In particular, UCG shows the greatest capital weakness; therefore, based on this scenario analysis, it should promptly focus on capital optimization actions (e.g. rights issue and spin-off of some non-core assets).

## Conclusion

This work have looked in detail at the uncertain state of health of the Italian banking system, which, further to be small and highly fragmented, is overburdened by NPLs. A problem that, as we have seen, finds its roots in the lack of an active and liquid secondary market for NPLs that could instead sustain corporate and financial restructuring. A big problem that, however, is not an emergency for the whole banking system and that can be managed in the medium term, quoting the words of the Bank of Italy Governor. Nevertheless, even if the sale of NPLs to the market is not immediately required for all banks and it is only one of the possible strategies to be adopted, it is clearly the fastest way to better purse the banks' deleveraging and de-risking. Over the last year, there have been clear signs of picking up. Also under the pressures of the ECB, all banks have devoted a large part of their business plans to the theme of NPLs disposals. At the same time, the Italian government has put in place the long awaited reforms. However, Italian listed banks are still under pressure and the market seems to discount excessively the capital deficit in this adverse scenario. Only time will tell if the measures so far adopted are truly effective. Certainly, some specific recommendations should be followed by political authorities (e.g. increase credibility on the markets) and banks (increase NPLs transparency).

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